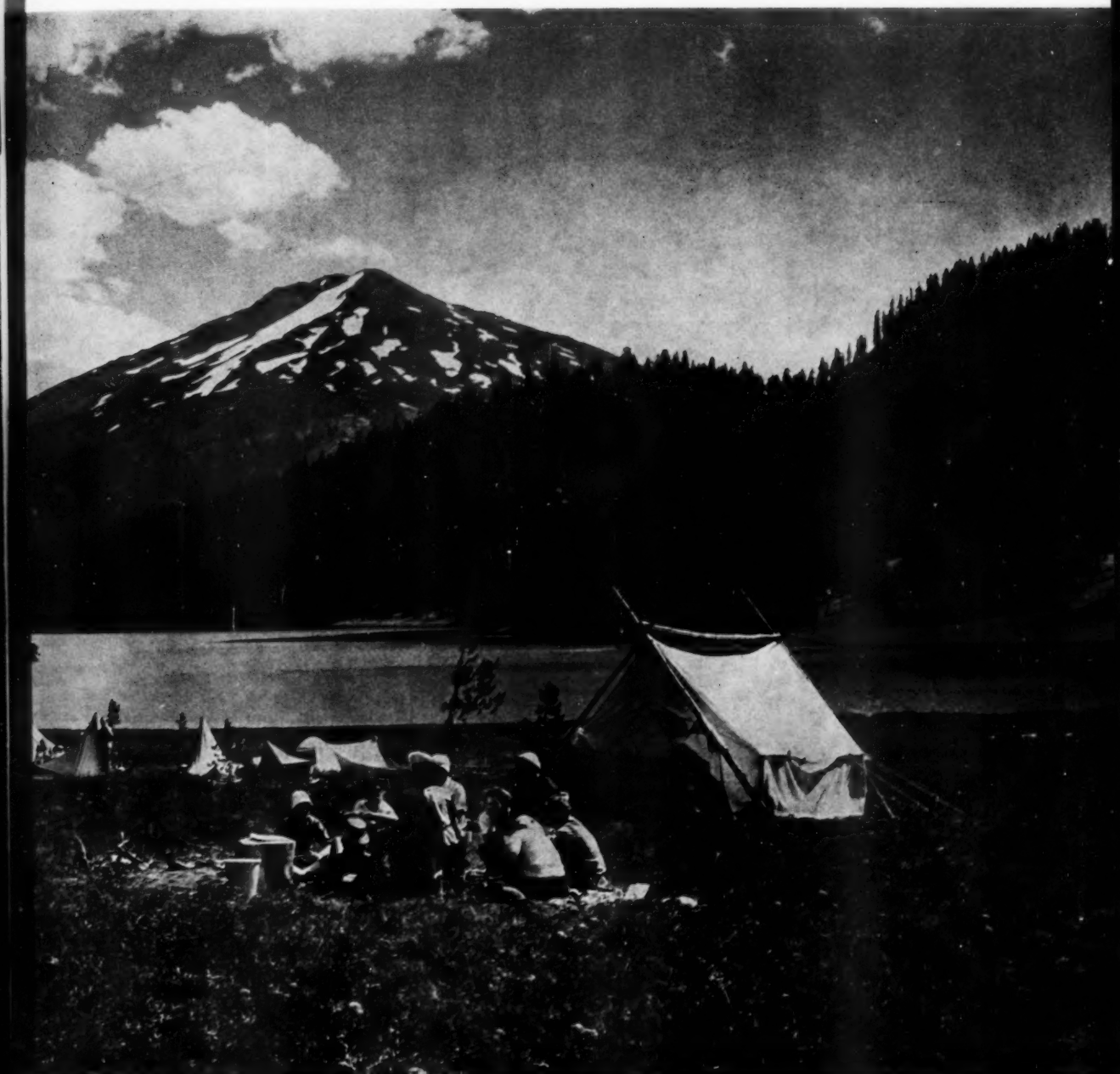
American
FORESTS
The Magazine of Forests, Soil, Water, Wildlife, and Outdoor Recreation
JANUARY 1961 **50 CENTS**



"Babes In the Wilderness"—Girl Scout Encampment on Deschutes National Forest . . . *see page 24*

YOUR INVESTMENTS IN LAND AND WATER . . . *See Page 4*

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Mr. George Beechwood of Hamilton, Montana, writes: "I was told I could do more work in less time with less effort with a Homelite chain saw. It's true. I'm glad I got a Homelite."

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The American Forestry Association, publishers of American Forests, *is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.*

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Vol. 67, No. 1, January 1961

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Cover—Girl Scouts at Todd Lake base camp preparing for trek into Three Sisters Wilderness Area. Photo by Lee Prater, U. S. Forest Service

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Forest Forum

"THE AMERICAN FORESTER"

Over the Rockies and the Appalachians
Through the green valleys and great national parks
There stands a man
Dedicated to the majestic trees.

He lives in the quiet country
Where the only sound is the murmur of the wind in the tallest oaks
He watches a mother bear nurse her cub, and through the years
Sees the cub raise young of its own, beneath the boughs of his beloved trees.

One night he notes a tiny glow, away on a distant ridge
Before the dawn has brought the day
He watches every tree devoured
Burned by the evil light of fire.

And the ground is bare where a forest grew
He quietly takes his hoe
And plants a seed for every tree that stood.
As ten years pass the bare ground sprouts a tiny forest
Come thirty years and who could ever know
That fire was in these beautiful boughs
Only the forester who put them here.

When one day his work is done
When green trees grow where the earth and ashes mixed
He rests his head on a sullen trunk
And passes on into endless sleep.

Unknown to man, no soul shall weep his death
Yet somewhere in a beloved garden
There stand a thousand monuments
Paying their homage to his humble being.

From the roar of the mighty Sequoia
To the whisper of the Virginia pine
His name shall echo through the land
The American Forester, guardian of the trees.

Bruce Parkyn Jackson
1745 K St., N. W.,
Washington 6, D. C.

(The Fifth World Forestry Congress and its 65-nation tree-planting ceremony at International Friendship Grove have inspired an unusually large number of poems that have arrived "over the transom" at *American Forests*. This is one of them.—Editor)

"Seven in All, But Enough"

EDITOR:

. . . It was clever of you to quote "G.P." as you did in the editorial "Seven in All, But Enough" in the November, 1960, AMERICAN FORESTS. Also, the very fact that he himself told the story in the words he did, leaves no question as to the importance of the Society, from its start, as a factor in the development of our new profession.

The fact that "G.P." could and did entertain the Society and its prospective members, in the way he did in his own home, was entirely characteristic of him. It is not surprising that the young men whom he and Graves and Price picked out and enlisted to form the Forest Service were loyal to him and to its ideals; and not long thereafter to high professional standards.

I am also glad you listed the distinguished federal officials that "G.P." named as guests at the baked-apple parties. Never, otherwise, could we prospective foresters have had such opportunities. Pinchot realized this. That is why he did it. It is well that personal features like this about him should be remembered.

To you, my appreciation of your tribute to me personally. It is certainly one of the chief satisfactions of a long life, the major part of which has been spent in the service of professional forestry.

Ralph Sheldon Hosmer
209 Wait Avenue
Ithaca, New York

The "Little Guys"

EDITOR:

To receive a personal copy of your fine publication carrying the story of our cooperative campground ("Mr. Buchanan's Park," November, 1960) was indeed gratifying.

Of the articles that have appeared, only yours emphasized that this was a contribution to public recreation by the "little guys." For that you have our lasting thanks. We little guys in the forest industry are neither ignorant of, nor indifferent to, forest recreation values. My main endeavor has been to demonstrate that a small operator can, in a small way, contribute to the public good in this field.

If our example will move other small companies to cooperate with local community groups in similar accomplishments, possibilities are enormous for increased public recreation facilities in the national forests.

Our mutual friend, Mr. Leonard Netzorg, informs me that several operators in Region Six National Forests are proposing to local groups that they join in similar undertakings. If this idea takes root and spreads throughout the industry, our purpose is accomplished.

Thank you, again, for your splendid article.

John F. Buchanan, Mgr.
Douglas Studs, Inc.
White Sulphur Springs, Montana

Lonesome for Kentucky

EDITOR:

. . . If and when I get back to America I would like to write you something—maybe I'd better do it while away if time permits —something about *leaves*—just plain leaves. I never knew I would be so homesick for multi-colored leaves in our Kentucky hills in Autumn. I never knew leaves meant so much until I came to Egypt where leaves don't turn in Autumn. With all best wishes to you—

Jesse Stuart
The American University at Cairo
113 Sharia Kasr El Aini
Cairo, Egypt

(Jesse is in Cairo for a year teaching creative writing to the Egyptian students. He sounds homesick to us. No doubt he would greatly appreciate hearing from some of his many friends in AFA. Meanwhile, we hope he does that piece on leaves for us so urge him to do it when you write —Editor)

Survival of Chile

EDITOR:

The November issue of AMERICAN FORESTS published an article, "The Vanishing Continent," by Rafael MacClure Elizalde. An introductory paragraph on the author revealed that Mr. Elizalde is the author of a book entitled *The Survival of Chile*. Can you advise me as to where I can obtain a copy of this book, the cost, number of pages, and whether it is in English as well as Spanish?

Philip Wick
411 Fifth Avenue
New York 16, N. Y.

(In reply to Mr. Wick and others who have inquired about this book, it is a volume of 180 pages and is published in Spanish only. Copies may be obtained by sending one dollar to Senor Vittori Manerelli, Director de Agricultura, Ministerie de Agriculture, Teatinos 40, Santiago, Chile.—Editor)

Potholes

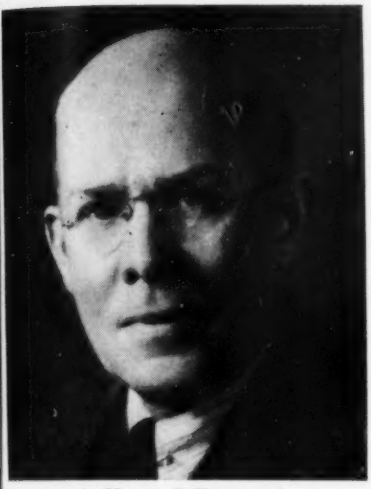
EDITORS:

Mr. Panzner and I have noted one slight error in the lead of our article, "Prairie Potholes—A Vital Waterfowl Resource." The statistics titled "1975 Box Score" were obtained from a release by Kramer A. Adams. These were then quoted in my presentation at the Midwest Wildlife Conference in Minneapolis, Minnesota, December, 1959, not by Mr. Adams. Mr. Adams, himself, would likely be the only one to pick up this slight error. However, we felt it should be brought to your attention.

We feel, as technicians, that you and your staff have been doing an excellent job covering various aspects of the natural resources picture of this country. Keep up the good work.

Grady E. Mann
Wildlife Biologist
Fish and Wildlife Service
U. S. Department of the Interior
Fergus Falls, Minnesota

(*Turn to page* 51)



G. Harris Collingwood

A FUND FOR A FORESTER

THE Washington Section of the Society of American Foresters has established a scholarship fund in memory of the late G. Harris Collingwood. The scholarship fund, which will provide financial assistance to beginning students in forestry, is part of the program of the section's Education and Scholarship Committee.

The Collingwood Scholarship Fund is an outgrowth of Harris Collingwood's interest in conservation education. As a very active member of the Washington Section, SAF prior to his death in 1958, Mr. Collingwood spurred the section's efforts in reaching the youth of the area. As forester for the The American Forestry Association, 1928 to 1940, his interest in youth and youth programs also was emphasized.

The Washington Section, SAF, has agreed to appropriate annually from its dues the sum of $100 to the scholarship fund. Friends of Harris Collingwood in the Washington area have added to the slowly growing fund. As one of them put it, "Harris was always a giver—a giver of advice, counsel, and direction to those who were associated with him. My contribution is only a token payment, with a hope that others, through this educational effort, may receive the guidance that Harris himself can no longer give."

The fund, now deposited in a special account, is drawing modest interest, pending establishment of criteria on which to base the annual award. The committee plans to

(*Turn to page* 51)

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Sitting in a Row...
(THE WORLD'S BEST)

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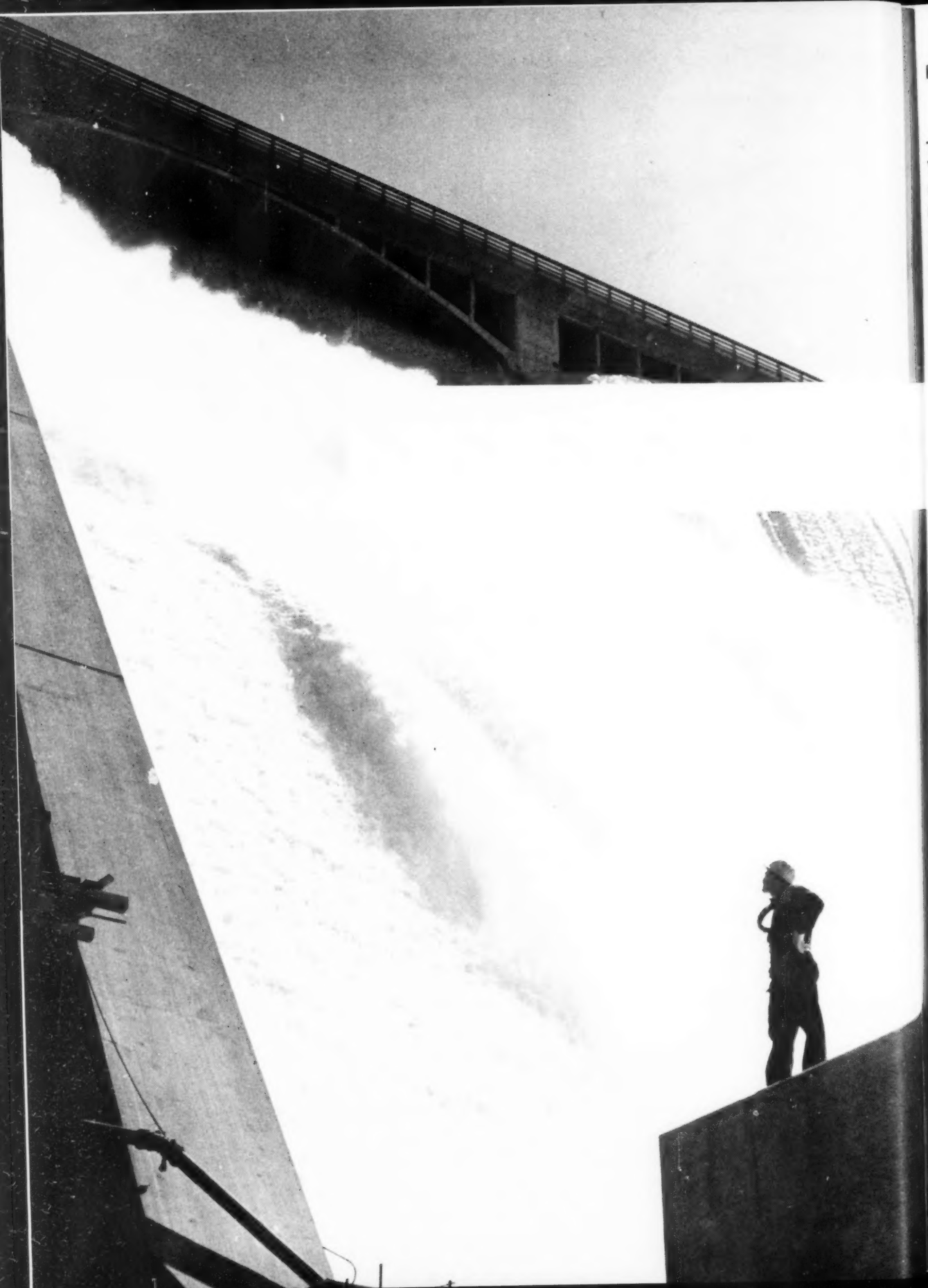

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By MARION CLAWSON and IRVING K. FOX

Marion Clawson

Irving K. Fox

The federal taxpayer's investment in land and water resources—and that means YOUR investment—is roughly one billion dollars a year. That figure is certain to rise as the nation looks to mounting needs in the resource field due to increasing population and other pressures. In view of the size of this investment, the authors of this Resources for the Future study are raising the question "How well-based are these federal investment decisions?" and "Is there room for improvement?" Both writers believe there is a need for greater efficiency here and their answers are set forth in this and the February issues of American Forests

Your Investments in Land and Water

PART I—HOW WELL-BASED ARE FEDERAL DECISIONS?

IN the 1960's the problems of land and water resource management in the United States are moving into a new and more critical phase. Demands upon these natural resources increase steadily as the country fills up and the economy grows. With the more obvious lines of development already underway, the choice of new programs becomes more difficult and the once-comfortable margin for error keeps narrowing.

The questions raised by these fundamentally healthy growing pains are far from academic.

Fifteen to 40 years hence, how will Americans be fixed for supplies of fresh, clean water? How will forest growth and harvest, and the grazing capacity of the public lands, stack up against requirements? Will space and facilities for outdoor recreation come anywhere near meeting the mounting demands of a growing population with more leisure time and more money to spend? Such questions bear strongly on how strong and prosperous the United States will be a few years from now, and how pleasant a country to live

These cost money. Grand Coulee Dam (left), Columbia irrigation project, (below)

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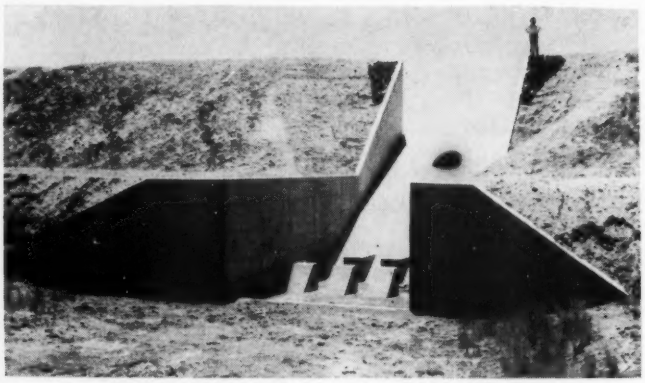
$ COST: Contour trenching $30 to $50 per acre. Seeding $10 to $15 per acre



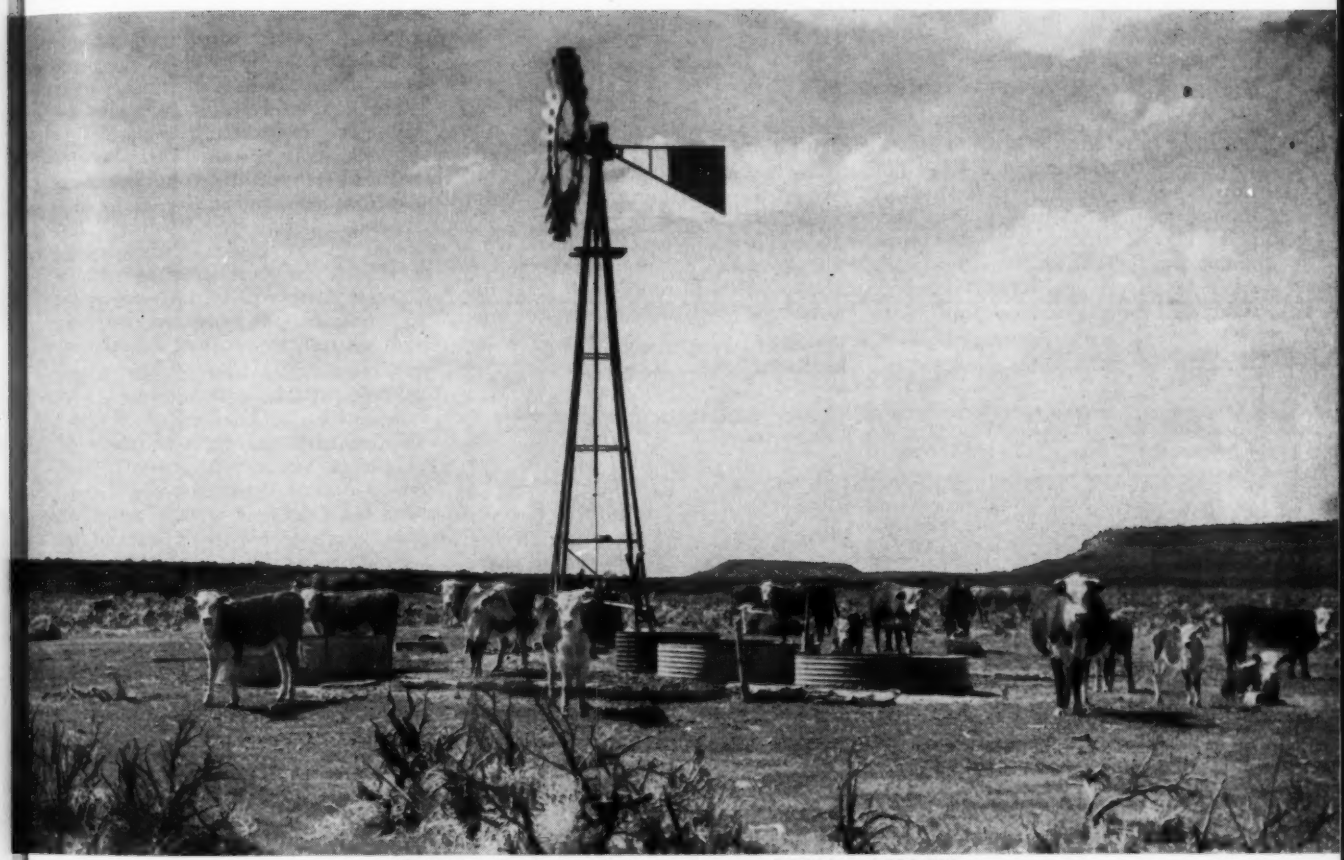
$ COST: These models cost from $100,000 to $200,000 each, are widely used

$ COST: These structures are somewhat less expensive—range from $50,000 to $100,000

$ COST: Range seeding averages from $50 to $80 per acre. Range fencing on public lands costs $600 to $800 a mile

in. The answers will depend to a large extent on what the federal government does or does not do toward the development, conservation, and general management of land and water resources.

In saying this we fully recognize that many—probably most—of the decisions in resource management will continue to be made privately by business firms, organizations, and individuals. In the nation's mixed economy the private sector always has been the largest, in recent years by a margin of about three to one; there is no reason to expect any great change. Most of the output of resources products and services results from private programs. This holds not only in agriculture but also in forestry, electric power production, and even in recreation. And a good share of the public decisions will be made by state or local agencies of government. Nevertheless, the pol-



$COST: Uncle Sam shells out between $5,000 and $10,000 for each one of these structures built for thirsty stock

icies and programs of the national government are of first importance, both for their direct effects and for the climate they provide for other public and for private actions. In the future they are likely to become even more important than they are now.

How Good Is the Machinery?

The amounts of money and manpower that the federal government invests in land and water programs, and the nature and general direction of those programs, will affect the life of every citizen. Because these are questions that the voters must decide, our immediate concern in these articles is with the way in which public decisions are made. We shall be dealing, therefore, with fundamental methods and procedures rather than with the dramatic, often emotionally charged, controversies such as wilderness preservation, private versus public power, or big dams versus small that so frequently overshadow the basic machinery through which democracy works. But in the long run the really key question is how good the machinery is. Does it provide a basis for choice among all reasonable alternatives? And how broadly based—that is, how public—are the public decisions?

In considering these fundamentals we shall confine ourselves to those that relate to the national government's activities in water development and in management of the federal lands, leaving out those that primarily concern a number of other important federal programs, notably the field of agriculture. The main reason for this limitation is to keep an already large subject somewhere within bounds.

For all of the gains that have come about through federal policies and programs for land and water, and for all of the competence and integrity displayed over the years by leaders in Congress and the executive establishment, we believe that up to now the basis for decision-making is too limited for the kinds of decisions now in prospect. Further we believe that there are several possibilities of correcting some of the shortcomings and thereby of getting better returns on the national government's long-range investment.

One Billion Dollars a Year

The most tangible, if not the most significant, measure of the importance of the federal investment in land and water resources is its size in dollars—about $1.5 billion annually during recent years. With the increases in population and gross national product that seem likely for the future, this resources investment might well reach $2 billion by 1975 and $4 billion by the year 2000. Even the present figure, though

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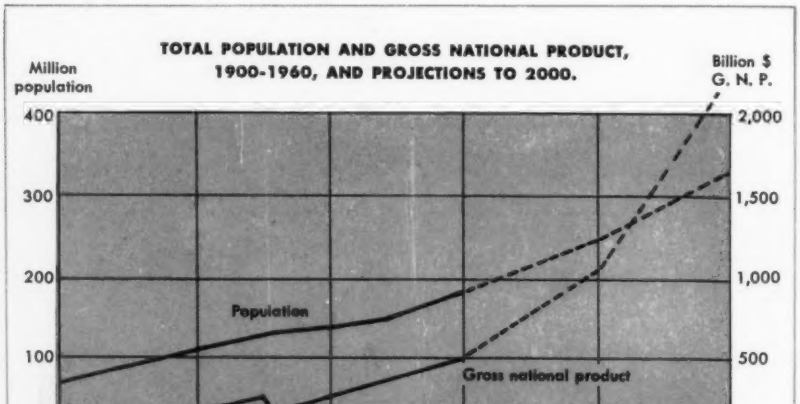
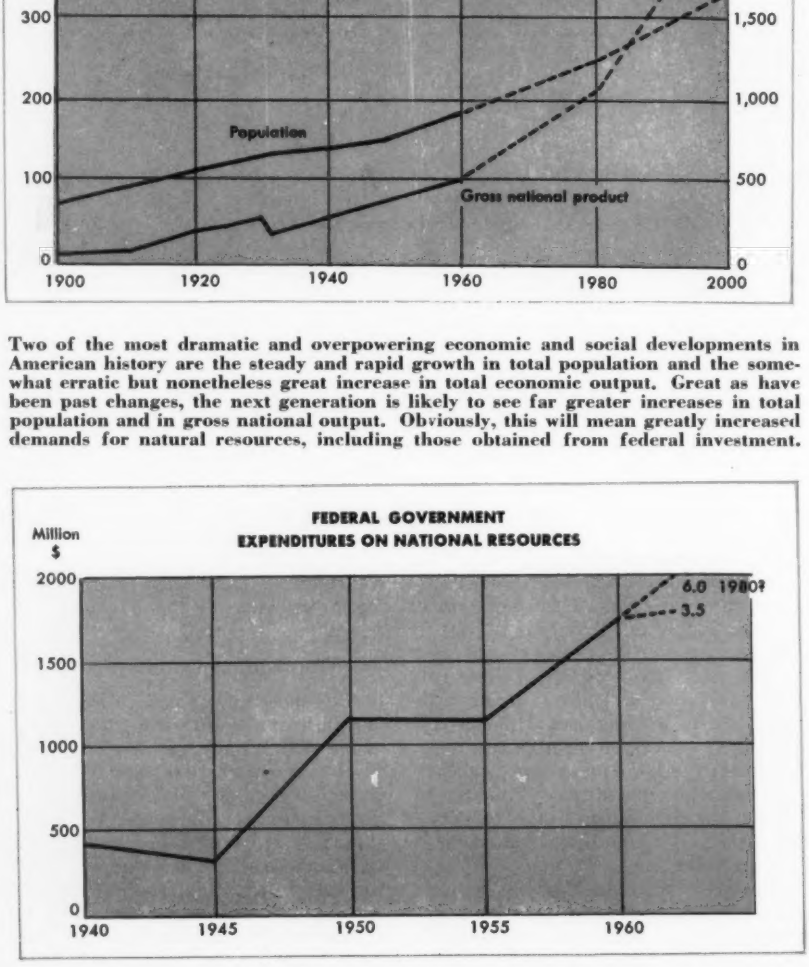
not huge in relation to an $80 billion total federal budget and a $500 billion GNP, is an impressive sum of money, as high or higher than the price tags of any of the recent proposals for federal aid to education. As a taxpayer, you have a sizable stake in how the federal funds for land and water are spent.

As a citizen and shareholder in America's future you have a far greater stake in the soundness of the federal investment. Quite apart from the amounts of money involved is the question of how much good the people of the United States are going to get out of their vast resources of land and water. A missed opportunity may weigh far more heavily in the long-term balance than a well-run program on too small a scale. New problems will arise as the population grows and becomes even more urbanized. Familiar problems will be harder to solve as more and more of the high-grade, more accessible land and water resources become pre-empted. In drawing up the budget, competition will become keener between the claims of resource development and other claims on federal expenditures. With such additional constraints the tug between national and local interests will intensify; there will be less leeway for devoting federal funds to programs that yield only sectional benefits.



Two of the most dramatic and overpowering economic and social developments in American history are the steady and rapid growth in total population and the somewhat erratic but nonetheless great increase in total economic output. Great as have been past changes, the next generation is likely to see far greater increases in total population and in gross national output. Obviously, this will mean greatly increased demands for natural resources, including those obtained from federal investment.



The trend in demand for almost all types of land and water resources is upward. Estimates of future water requirements suggest a fourfold increase in water withdrawals from streams, lakes, and underground sources by the year 2000. In addition, water pollution from cities and industries will require further large investments, if it is to be neutralized within acceptable limits. The *Timber Resource Review* indicates large increases in future demand for forest products. At least part of the required supply must come from federal lands. From all indications, the demand for outdoor recreation will increase severalfold. (See "The Crisis in Outdoor Recreation," by Marion Clawson, in AMERICAN FORESTS, March and April, 1959.)

Are We Getting Our Money's Worth?

The rise in demand for all resources will in itself require increased federal investment. Furthermore, the amount of investment required for a given increase in output is likely to be higher in the future. For instance, the most accessible and cheapest sources of water have already been developed. As recourse is had to less efficient reservoir sites, an equal volume of storage in the future will be likely to cost more than in the past. Moreover, a given volume of storage behind the first dam on a river produces more stream flow regulation than does the same volume of storage created by a second dam; the second dam is more efficient than a third, and so on. The most accessible stands of timber have been developed on the national forests. Further access road construction will often cost more per volume of timber made available than has

past road building. To a degree, the same is true of improved fire, insect, and disease protection facilities. Our recreation use of much forest land in the past has been incidental to forestry; in the future, larger investments primarily for recreation will be required. In more and more instances, further development of land and water resources will come at increasing cost.

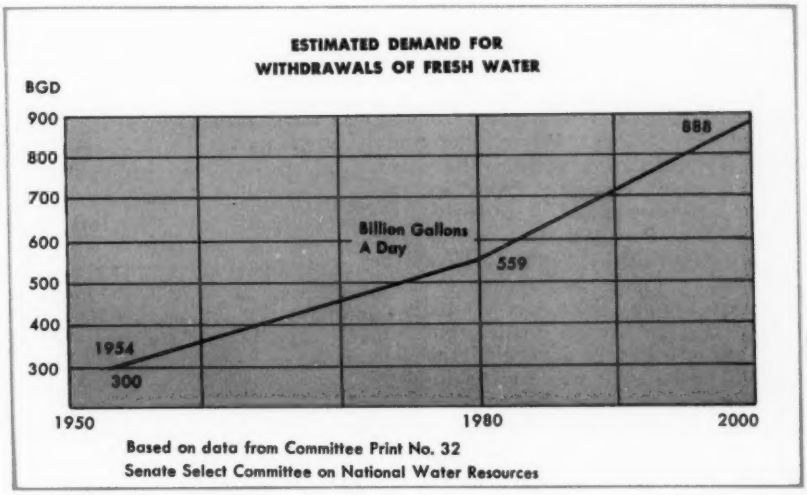
The demand for land and water resources is rising fastest in those regions of the country where the federal government has traditionally played a major role in resource development. Between 1940 and 1960 total population in the West rose 95 per cent compared with 29 per cent for the rest of the country. The westward tide of population will almost surely continue. Most of the federal lands are located in the West, and the federal government has especially large commitments for water resource development there.

The federal government may well broaden its responsibilities for land and water programs. Recently the Omnibus Rivers and Harbors Bill authorized the Corps of Engineers and the Bureau of Reclamation to develop municipal and industrial water supplies. In 1956 the federal government adopted a policy of providing grants-in-aid to municipalities for the construction of sewage treatment plants. The establishment of the Outdoor Recreation Resources Review Commission was a mild extension of federal activity into the recreation field. It would not be surprising if this foreshadows a major further extension of federal activity into recreation—possibly someday grants-in-aid in this field also. But these and other possible extensions of federal activities are most unlikely to bring any diminution of responsibility in the traditional areas of flood control, reclamation, navigation, power, forestry, and public lands.

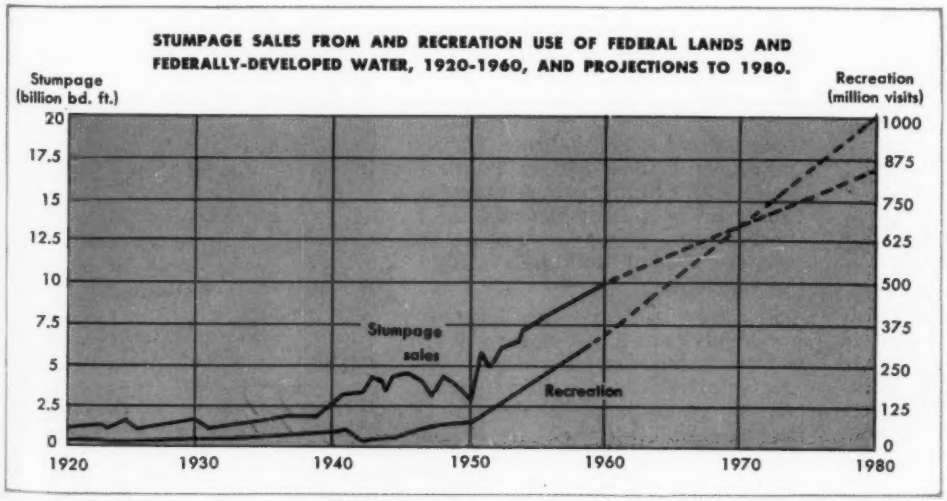
Pay the Piper for Errors

The consequences of a poor choice in resource development become more serious with each passing year. Most land and water investments are terribly permanent. A modern dam is built to last for scores or hundreds of years. Grand Coulee Dam weighs over 20 million tons. It is there to stay. The same is true of every other major dam in the nation. When we make a major water investment we are changing the stream flow patterns of our rivers for generations. Right or wrong, there she is, and there she will be for a long time.

The same thing is true to a lesser degree of land investment programs. When we build a forest access road, begin logging in an area, and devel-



Stumpage sales from federal land and recreation on federal lands and federally-developed waters have each risen greatly since the war. But the prospective increases in each over the next 20 years are vastly greater than the increases which have occurred in the past 20 years. Recreation, grown now to major proportions, threatens to overtake and pass timber production as an economic output.



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op a forest industry based on the logs, we have made a commitment for a long time. When we develop a popular campground, we are making a social if not a physical commitment for years into the future. If we build a dam that floods out a beautiful river valley, we have foreclosed its use for recreation for centuries if not forever.

Thus the decision to build a dam, construct a road, or harvest virgin timber is a solemn one. Once the deed is done, it cannot be undone by us or even by our children in most cases. The decisions the nation will make in the next few years are of crucial importance. While many western streams are now rather fully utilized, many eastern streams are just on the threshhold of intensive development. Past decisions were important, too, but thus far there have often been enough uncommitted resources that some room was left for maneuver. The choices made from now on will largely determine the pattern of resource use for the indefinite future. It is a now-or-never situation. This is what the wilderness advocates have been saying; it is what is happening in river basin development.

The probability of increased demand for federal investment in land and water resources is one blade of the scissors; the other blade is the probability of increased competition from other demands on federal funds and, at the same time, of increasing resistance to enlarging the total budget. Between these two blades, something may get cut.

The political struggle over the size of the budget, the shares allotted to different activities, and the source of revenue is an old story and one that will continue. No one can say for sure what the outcome will be. But a few elements in the situation seem fairly clear.

First of all, there is major opposition to any general increase in federal taxation, either by raising present rates or by tapping new sources, such as a federal sales tax. We may accept higher social security taxes in order to get greater benefits, and in time of recognized national emergency we would accept higher general taxes. But on the whole, opposition to larger federal taxes is a political fact of life. Of course, as the national economy grows, total federal revenues from the present taxes will also increase. But they may not increase proportionately to the need for federal services.

No Defense Reductions

Second, an early major reduction in national defense expenditures now appears most unlikely, and there may be none for a very long time. While there has been sharp disagreement as to the size and make-up of the federal defense expenditure, very few responsible persons have suggested a reduction. Instead, increases in the short run seem necessary. We simply dare not risk our existence as a free nation. The best we can hope for is that someday the situation will improve. There is somewhat less agreement on the need for foreign aid, but still a general acceptance of the need for continuing it at some substantial level. These two items are more than half of the present federal budget.

Thirdly, social programs of many kinds are firmly entrenched in the American political and social structure. Old age and survivors insurance, aid to the handicapped and aged, unemployment insurance, and the like are now fully accepted. A change in administration in 1953 did not reduce or eliminate them. They will almost surely be extended in the future despite debates over how much, to whom, at what cost, and out of what funds they will be extended.

Fourth, the fact that so much of total population growth is occurring in urban areas will surely create major demands for investment of federal funds in cities; we are already investing substantial sums for urban renewal and urban housing. Urban people will have greater political power in the future, as their numbers increase. They will demand, and probably will get, a larger share of whatever federal funds are available for investment.

On top of these growing demands for greater federal investment will be the rising sums for assistance to veterans, interest on the federal debt, various grants-in-aid to the states, and the like. Little choice is possible here. Such expenditures seem irreducible, at least for several decades.

Scramble for Funds Intense

The sharpening competition for shares of the national budget, plus general pressure to keep the lid on tax increases, means that land and water programs—even the best of them—will have to fight hard for funds. This will be painful—perhaps really damaging in some instances. But one side effect may be constructive: a possible lessening of the pressure for federal financing of projects that benefit special groups. For instance if the federal investment budget becomes really tight, many groups that want (and now usually get) a flood control program from which they benefit without direct cost to themselves may prefer paying a considerable share to the risk of having no program. If the choice is between recreation facilities available at modest cost and no recreation facilities at all, the public may choose to pay. Financial stringency can force many directly interested groups to re-appraise their own position. Half a loaf may be better than none.

But even if some of the rough edges should be smoothed off, the larger issue of national, as opposed to regional or local, interest will remain as one of the major problems of resources investment. A federal investment in water or land resources

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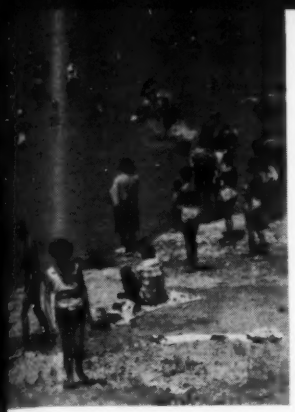
Timber on Olympic Forest makes Uncle Sam money. But access roads come high

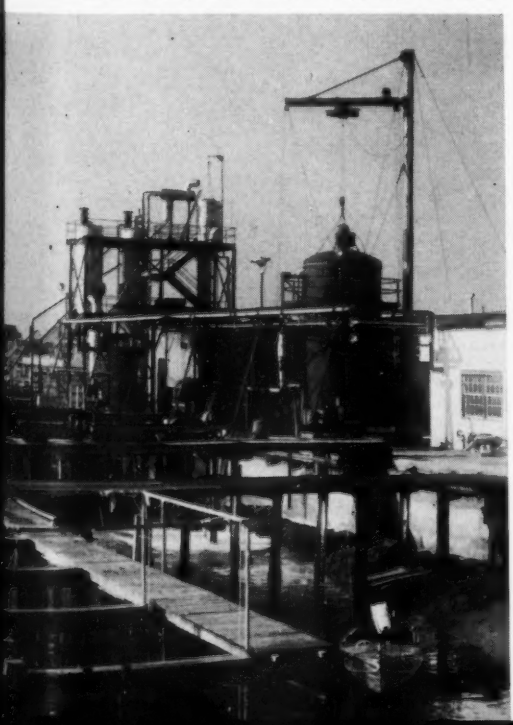


Army Engineers are in recreation business too. This is Grenada Landing at Vicksburg Grenada Reservoir

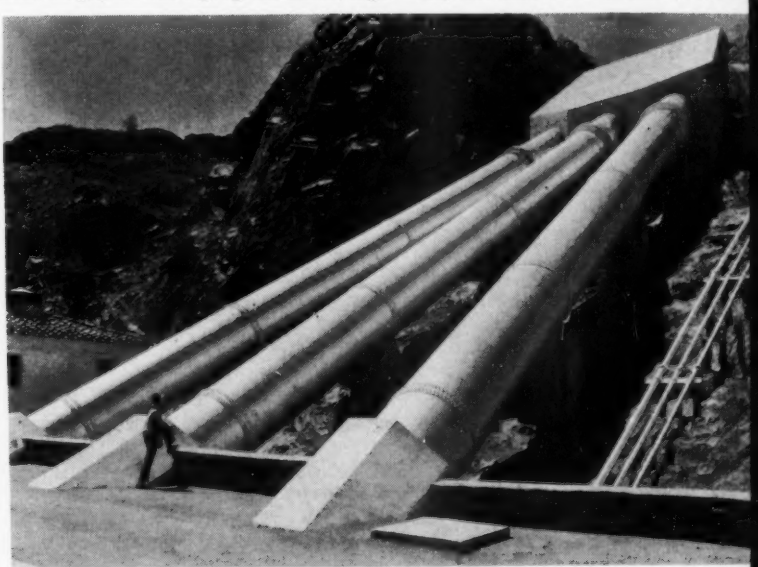
Providing facilities for millions of visitors to national forests costs more money. This is the forest camp on Langdon Lake in Washington's Umatilla National Forest

People and more people keep coming. This is Nantahala Forest, North Carolina

Vertical stills at Wrightsville Beach, N.C., mean that sweetening saline water is going to cost $



Colorado River Aqueduct. To take these giants over Rockies costs plenty. Most taxpayers know progress comes high—only ask that it be efficient progress



Secretary of Agriculture-Designate Orville L. Freeman

Secretary of the Interior-Designate Stewart Lee Udall

THE NEW ADMINISTRATION

YOUTH TAKES OVER

President - Elect John F. Kennedy has chosen a team of young men

AS AMERICAN FORESTS went to press, the first copies of AFA's monumental study on forest landownership in Minnesota were coming off the press in Philadelphia, and the first copy was slated to go to a 42-year-old Minnesotan who endorsed this study and gave it his complete support and cooperation as governor of the state. He is Orville Lathrop Freeman, who was summoned to Washington by President-Elect Kennedy on December 15 to become Secretary of Agriculture.

"Gov. Freeman is an extremely able man, very serious, and without his support we wouldn't have gotten very far on the association's landownership study in his state," Dr. S. T. Dana commented on first hearing of the new appointment. Dr. Dana, perhaps the most outstanding forester in America, directed both the Minnesota and California ownership studies of The American Forestry Association.

Freeman, a three-term governor of Minnesota, was defeated for re-election last year while his political mentor, Senator Hubert Humphrey, swept the state and carried President-Elect Kennedy over the top. Born in Minneapolis, Freeman is of Swedish and Norwegian ancestry. A brilliant student, he graduated *magna cum laude* from the University of Minnesota and its law school, and is one of the elite handful in politics who sports a Phi Beta Kappa key.

During the war he served in the Marines and in the battle of Bougainville, was struck in the jaw by a Japanese bullet. This resulted in a hospitalization period of eight months, during which time he had to learn to speak again.

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Udall Selected for Interior

APPOINTMENT of a 40-year-old Arizonian to head the vast Department of the Interior with its 750 million acres of land was announced last month by President-Elect Kennedy. The new secretary will be Stewart Lee Udall, member of an Arizona family prominent in Southwest affairs, and who is presently serving as U.S. Representative from that state. Mr. Udall brings a keen interest in conservation to his new job and the choice is considered a happy one by most people in conservation movement.

Mr. Udall is no stranger to The American Forestry Association. As a freshman member of Congress in 1955 he interested himself in the dis-

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By ALBERT G. HALL

STEWART L. UDALL, SECRETARY OF THE INTERIOR, Designate, is in the words of President-elect Kennedy, "a dedicated, responsible progressive." The 40-year old Secretary comes to his new post with first-hand knowledge of the affairs of the Department of the Interior. His native state of Arizona is still largely a federal territory, some 45 per cent of its total land area being under federal ownership, not including 19 million acres of Indian trust lands. By major jurisdictions, Bureau of Land Management has 13.2 million acres; Forest Service, 11.4 million; Fish and Wildlife Service, 1.5 million; National Park Service, 1.5 million; Bureau of Reclamation, 1.4 million.

THE NEW SECRETARY IS THE FIRST ARIZONIAN ever to be named to a Cabinet post. He has announced himself as a proponent of the national park system, and he looks to conservation progress under the incoming Administration to be comparable to that under the administrations of Theodore Roosevelt and Franklin D. Roosevelt.

ORVILLE L. FREEMAN, SECRETARY OF AGRICULTURE, Designate, is also a political liberal. The new Secretary is now completing his third term as Governor of Minnesota, an administration marked with advances in that state in numerous welfare measures. Principal problems facing the Department of Agriculture are those concerned with farm income and food surpluses, and Governor Freeman has promised income parity for farmers, and reduction of surpluses through a Food-for-Peace program. The latter will be a cooperative undertaking of the State Department and the Department of Agriculture to reduce agricultural surpluses at home by shipments to needy nations abroad.

IN PROGRAMS AFFECTING FORESTRY, IT IS EXpected that the new Secretary will be more liberal in his approach to the state and private forestry aspects of the department's activities than his predecessor has been. The Eisenhower-Benson program advanced forestry and increased expenditures on the national forests, but the Administration was reluctant to expand into the state and private areas. A change in philosophy can be anticipated. Governor Freeman, a close political associate of Senator Hubert Humphrey, can be expected also to give serious consideration to the Senator's proposals for a Youth Conservation Corps and continued expansion of federal forestry activities, on both federal and private lands.

INCREASED FEDERAL ACTION TO STEM STREAM pollution was indicated by Congressional leaders and others at the National Conference on Water Pollution held in Washington, D. C., last month. Surgeon General Leroy E. Burney called stream pollution a national disgrace and said that some $10.6 billion would be needed for the next ten years of clean-up work.

FEDERAL AID TO STATES AND MUNICIPALITIES FOR sewage treatment works was promised by Senator Robert S. Kerr of Oklahoma and Representative John A. Blatnik of Minnesota, who will introduce legislation for this purpose when the new Congress convenes. Similar legislation approved by the 86th Congress was vetoed by the President. The vetoed bill would have increased federal aid from $50 million to $90 million annually. Senator Kerr said that the request to the new Congress will be greater than the $90 million proposed last year. Opposition to the federal government playing a large role in cleaning up the nation's waterways was also expressed at the conference. Local groups, and particularly the chairman of the New England Water Pollution Compact, felt that there is no need for extending the jurisdiction of the federal government into those areas where state and local

(Continued on next page)

programs are in operation or are projected.

LANDOWNERS TO PROTECT ALLAGASH SCENERY. AT a recent meeting of the Northeastern Resources Committee, owners of land through which the Allagash River flows adopted a policy for the preservation of the scenic beauty of the area compatible with their use of the forest land for continuous production of timber. If successful in its application the policy will make unnecessary proposed public acquisition and public preservation of the waterway. Landowners have agreed to: grow and harvest timber under sound forest management principles; preserve the natural wilderness beauty of areas bordering on lakes and waterways; continue to permit public use of the area for recreation, but limit construction along the streams; give protection from fire, insects and disease in cooperation with the Maine Forestry District; cooperate with the Department of Inland Fisheries and Game in management of fish and wildlife resources; develop long-range plans for increased recreational use compatible with timber management.

THREE ALASKAN WILDLIFE RANGES TOTALING 11.2 million acres have been reserved from the public domain by Secretary of the Interior Fred A. Seaton which marks a tremendous victory for organized wildlife groups. The Arctic National Wildlife Range of 9 million acres forms the northeast corner of the state. Kuskokwim National Wildlife Range, 1.8 million acres is located in the Yukon-Kuskokwim River Delta in western Alaska. The Izembek National Wildlife Refuge is comprised of 400,000 acres on the north side of the Alaskan Peninsula. Funds for the operation and maintenance of these breeding grounds for migratory waterfowl, and habitat for bear, sheep, wolverine and caribou will be requested in the next Congress. In making these reservations the Department of the Interior points out that recent openings and restorations of lands to the public domain have exceeded reservations. Some 23.5 million acres have been opened to entry as opposed to 11.9 million acres reserved for federal administration under the McKay-Seaton administration of the department.

WILDERNESS AREA INCREASED IN 1960. HALF A million acres were added to the national forest wilderness system in 1960. The largest addition was the 485,505-acre Glacier Peak Wilderness in the Cascades in the state of Washington. Wild areas were increased by the addition of the Wheeler Peak area in New Mexico, an additional 3,000 acres to the Cucamonga Wild Area in California, and the San Jacinto Wild Area in California and Bridger Wilderness Area in Wyoming were reclassified from a former primitive area category, thus giving them greater protection from the inroads of civilization, according to the U. S. Forest Service. Some 1,000 new camp and picnic units were constructed.

SOIL BANK TREE AREAS NOW TOTAL OVER TWO MILlion acres. Since the conservation reserve phase of the soil bank program was started in 1956, a total of 2,168,540 acres have been "signed-up" under tree planting contracts. The bulk of the acreage is in the South, with the Southern Region of the U. S. Forest Service showing 1,913,359 acres. Top state is Georgia, 694,938 acres.

ADVANCE ROAD BUILDING IN THE PACIFIC NORTHwest can increase the utilization of an "undeveloped timber supply," according to John Fedkiw of the Pacific Northwest Forest and Range Experiment Station. Fedkiw told the Western Forestry Conference in November that advance roading in the next 40 years would yield approximately 100 billion board feet or about 2.5 billion board feet more per year from capture of mortality losses alone. An additional 100 million feet could result from thinnings, prelogging and sanitation harvests made possible by access.

CHALLENGING JOB OPPORTUNITY. THE NAVY IS looking for an aggressive forester to set up standards and guides for a management program for approximately 1.5 million acres of forest land on Navy installations in this country and in the Philippines and Honolulu. The job is in the GS-13 Grade and offers a starting salary of $10,635 plus additional benefits. The new job was made possible by an insertion to the Defense Appropriations Act of 1961 which now permits the Navy to fully carry out its policy to restore, improve and preserve its forests in the public as well as the military interest. Foresters who believe they are: 1) technically equipped; 2) are capable of selling a program; and 3) can get along well with all types of people should contact the Personnel Office, Bureau of Yards and Docks, Navy Dept., Washington 25, D. C.

Editorial

HOW SERIOUS IS THE POLLUTION PROBLEM?

MUCH has been written of late on pollution as it relates to streams, rivers, lakes, and oceans. Some of these reports are sober, carefully-documented presentations. Others have been in the nature of rash broadsides. These, apparently, are aimed to frighten us, but not infrequently, when carefully weighed, they fail to pass the test of scientific accuracy.

The question arises, how serious is the pollution problem?

In an attempt to answer this, we have broken down our coverage of the National Conference on Water Pollution into three parts. On page 17 appear comments by politicians, public servants, a labor leader, a newspaperman, engineers and interested laymen. On page 18 we present the statement of Dr. Ira Gabrielson, of the Wildlife Management Institute. We present this one paper in its entirety because, in our opinion, it represents what might be termed the compassionate conservation point of view as presented by a well-known wildlife specialist. Then too, he makes the very good point that once we know where we are going, everyone—federal and state goverments, industries, researchers and the public—should pull together in harness. Since streams and rivers know no boundaries, obviously the task ahead calls for a certain amount of "togetherness" and certainly no one group—municipal governments for instance—will be completely successful "going it alone." Finally, we invite the attention of readers to the statement by Surgeon General Burney on page 17. Dr. Burney, a man of sober judgment not given to rash statements, says flatly our pollution problem is a "national disgrace."

Our third part, appearing on this page, will attempt to cope with the gist of opinion as expressed by men of pure science—and we use the word "cope" intentionally as we do not feel altogether comfortable with them and they, in turn, are not altogether comfortable with politicians, laymen, and others of admitted less intellectual dimensions. For instance, witness the comment by Dr. Robert A. Kehoe, of the Kettering Laboratory: "In considering what is to be done (about pollution) it is clear . . . that the first step is the acquisition of sound information. *Let us be quite clear about this.* We Americans are credited with having an undue faith in legislation and regulation. So much so, that it is alleged that when we have no idea what to do otherwise, we resort to legislative or administrative gestures, which have the flavor, at least, of piety. I am not impressed with the fact that we differ much from other organized national groups in human society. The fact is that man has always adventured far beyond his knowledge or even his awareness of his ignorance, and has always expected to be rescued miraculously, from the consequences of his daring, or to be more realistic and less complimentary, his foolhardiness. Certainly in the present state of our understanding, and yet our ignorance, of the threat which our technologic society is imposing upon itself, there is need *to ponder, to plan, and to invest our time, our skill and our financial resources,* in obtaining the basic information which we require for our own safety."

Not too flattering one must admit —but wait—there's a brain working here. Just what does he mean? At the risk of over simplifying, we interpret it to mean "don't get the cart before the horse" — namely, action ahead of research, and "fools rush in where angels fear to tread," meaning that in our zeal we could easily and unwisely waste billions of dollars and have little to show for our efforts. The first need, then, is for more physiological, toxicological, and epidemiological research. And the second need, and the second step, lies in the "preservation, so far as possible, of uncontaminated water supplies, and the regulation of drainage areas, as well as the disposal of wastes in streams, so as to limit the contamination of water sources within specified limits."

Finally, we interpret it to mean—and this is collaborated to some extent by other pure scientists at the conference—that we need not, nor should we, push the pollution panic button "now." While none of us are drinking pure water today, the fact that most of us are still upright would indicate that up to now that wondrous mechanism, the human body, is shrugging off and in some cases actually making good use of some of the foreign bodies contained in the 1960 H_2O "cocktail."

Then there is no danger at all, you might ask? There certainly is, and without resorting to alarmist tactics we would like to state it is a very real one. As Dr. Kehoe, Dr. John A. Zapp, Jr. of duPont, and others stressed, man in the past has placed strong reliance in the good nature of old Mother Earth and her admitted virtuosity in preserving and protecting us. The first grim warning that we are heading into an increasingly artificial society came in the 19th century when such men as Pasteur, Lister, and Koch came to our aid in rescuing us from something called germs, some of them spawned in filthy water. Today, the artificiality of our existence increases even as our population increases and many new compounds are being added daily to the nation's arterial network of water. In addition to germs, including nematodes that might carry bacteria and which sift through filter systems, we now have the residue from literally thousands of new chemical compounds. Radio active fallout, detergents from washing machines, arsenics from orchards, farms and forests—these are just a few of the foreign agents that are filtering into our water supply. Not to mention the salts and other chemicals from the soil itself which find their way into streams via the erosion route. Incidentally, the soil treatment address of Carl B. Brown, of the SCS, deserves its place with the best of them in this pure science field with research documented and avenues for corrective measures carefully outlined.

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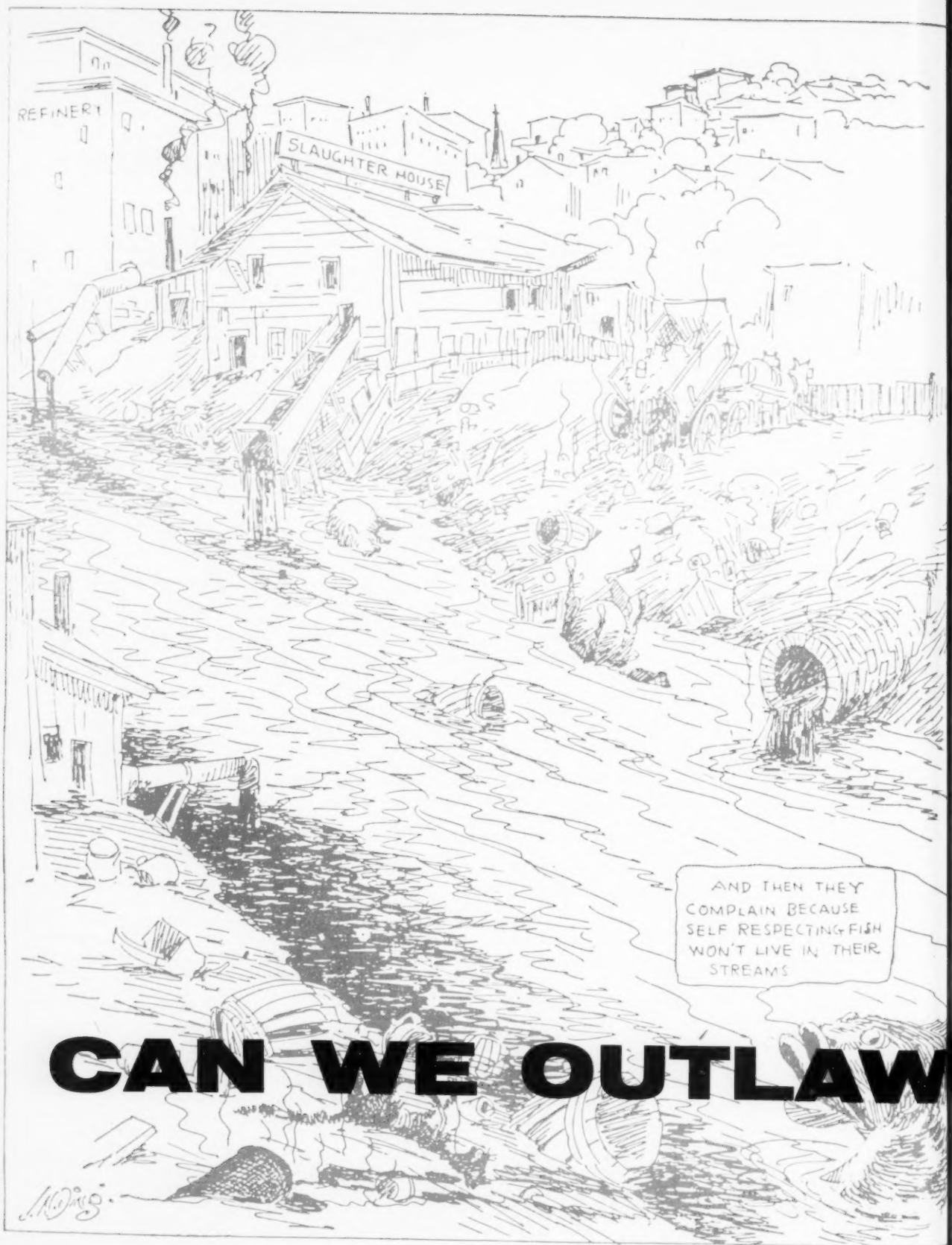

CAN WE OUTLAW P

WASHINGTON, D. C.—The National Conference on Water Pollution here in December painted a grisly picture of filth flowing in the nation's streams and rivers, agreed that a more vigorous cleanup campaign is indicated, and then served notice on the federal government that the states will vigorously resist any big-scale federal government pollution crackdown.

The one flareup at the three-day convention suggested by President Eisenhower involved the sensitive topic of federal-state relationships, and was touched off by Edward R. Thornton, representing the New England Interstate Water Pollution Commission.

When Thornton asked a standing vote opposing any federal crackdown on purely intrastate pollution, nearly 70 per cent of the 1145 delegates rose to their feet. Five per cent opposed it.

The pollution conference was called by the President in his message of last year vetoing the bill of Rep. John A. Blatnik (Minn.) that would have authorized $90 million in annual aid for anti-pollution construction instead of $50 million now provided by the federal Water Pollution Control Act of 1956.

In his veto message, the President called for the pollution conference to "study and assess the problem of water pollution . . . and to develop goals and programs that will assure progress in this field."

While some fish and wildlife representatives from New England decried the efforts of "anti-federal" spokesmen as not being truly representative of the Northeast, the temper of a majority of the delegates from all over the nation became clear enough when they piled to their feet in response to Thornton's call for a show of state strength.

A National Disgrace

Previously, the delegates had heard Surgeon General Burney call the present condition of the nation's rivers and lakes a "national disgrace." He said, "It is tragic for the world's richest, most powerful, and most technologically advanced nation to foul its own nest, limit its growth, and threaten the health of its people."

While he did not reveal where the money is coming from, Burney told the delegates it will cost about $10.6 billion over the next 10 years to clean up the nation's fouled waters.

Immediately thereafter, it became apparent that Democratic leaders will renew their onslaught against pollution via the stepped-up federal route when Senator Robert S. Kerr and Rep. Blatnik said they will introduce legislation next month increasing federal aid to states and cities for building sewage treatment works.

In addressing the conference banquet, Senator Kerr said, "the time for just talk has long passed . . . for whatever reason this conference was called, it can and will accomplish something real by spurring the necessary action. We in Congress need your support to get this job done. Isn't this the time and place to start an organized campaign."

Rep. Blatnik did not reveal how much his new bill will call for, but Senator Kerr said his proposed bill would top the $90 million figure and go beyond the Blatnik measure vetoed last year.

Discussions that followed in hotel rooms and corridors were possibly a preview of things to come in the next session of Congress. One group of partisans declared the "spenders" had fired their opening gun and now was as good a time as any to start fighting it out. Others said the government's aid to date had been of a modest nature and had been more than matched by state efforts to help curb the pollution menace. But the more an observer heard the more the problem seemed to gravitate around the sensitive problem of federal-state relations than around the pollution topic itself.

Two Points of View Emerge

On the floor, Albert E. Forster, president of the Hercules Powder Company of Wilmington, Delaware, and a representative of industry during the conference, suggested less federal and more local control of the campaign against pollution of the lakes and streams. His point of view had considerable support judging by the comments heard.

The statement by Dr. Ira N. Gabrielson, president of the Wildlife Management Institute, was considered representative of the point of view of many conservation groups that have been active in the pollution problem. In a moderate statement, Dr. Gabrielson said the federal program of grants-in-assistance for the construction of pollution abatement facilities . . . is one of the best approaches to this national dilemma that is making clean water a scarce resource. State leadership, he stressed, continues to lag on this problem. (See Gabrielson statement on page 18).

Surgeon General Burney supported this point of view in reporting that results achieved by the 1956 act have been most favorable.

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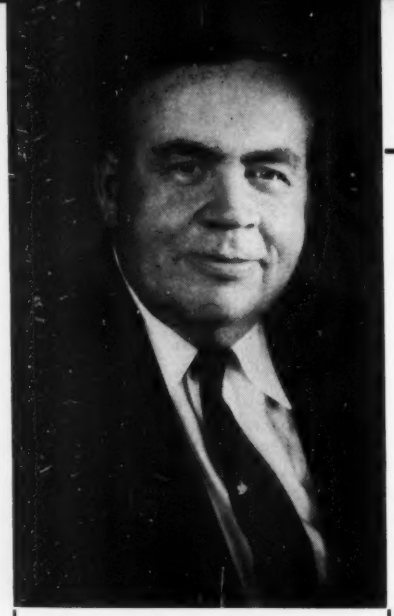
POLLUTION?

Pollution is

A PEOPLE PROBLEM

BY IRA N. GABRIELSON

An address before the
National Conference on Water Pollution



Ira N. Gabrielson

Few people living today can talk with more *joie de vivre* about the interesting traits and characteristics of birds and animals than Dr. Ira N. Gabrielson, president of the Wildlife Management Institute. Dr. Gabrielson is a walking encyclopedia of bird and animal lore, based on first hand observations all over North America. Nor have his observations stopped there. Unlike some specialists, he is intrigued by the whole web of life and what makes it tick. His wide range of experience plus an uncommon forthrightness have gained him considerable stature in the conservation field with the result that his views are eagerly sought and respected — even by people who might differ with him in specific instances. He organized the Fish and Wildlife Service in 1940 at the request of then Secretary of the Interior Harold Ickes.

THE purpose of this pollution control meeting has aroused considerable speculation and interpretation. I personally prefer the view expressed by Secretary Arthur S. Flemming when he met with the conference planning and advisory committee earlier this year. He said that he wanted this conference to reach agreement both on national goals for water pollution control and on the kinds of programs needed to achieve those goals. The failure of this conference to fulfill those objectives, the Secretary emphasized, would mean that it had been less than a worthwhile meeting. Secretary Flemming reiterated his position on November 17.

Many of you are engaged professionally with water supply, pollution control, and health activities of public and private groups. Others have close and continuous contact through association with water-orientated programs for allied municipal, industrial, agricultural, and recreational interests. You are acquainted with most facets of the pollution problem as it is known today. You are as familiar with the prevailing statistics of water supply, demand, and disposal as you are with the diverse philosophies that are brought to bear on programs advanced for remedial action. You also know that the locus of this problem is the plain fact that the demands for clean water exceed the supply in many areas.

Reports that analyze water supply and demand are in general agreement that little progress is being made in preventing the contamination of ground and surface waters. Case histories are cited for most parts of the country. Corrective action is not keeping pace with the problem. We are failing to improve and protect water supplies from the polluting effects of materials and conditions that we already have the technology to combat. Comparatively little is know about the new pollutants which are adding to the problem daily.

My purpose today is to identify the "public" that is affected by water pollution and to discuss opportunities for gaining pollution control objectives in light of present knowledge, experience, and probable trends. Helpful comments and viewpoints have been solicited from a number of national membership organizations, and they are incorporated in this statement.

The public to which casual reference sometimes is made, and whose viewpoint I was asked to express today, consists of the 182 million people that inhabit this nation. It is the sum total of all the people who use water. It extends from householders to farmers, from industrialists to recreationists, and from city planners to businessmen who try to accelerate community and state development and advancement.

Regardless of position and affluence, we all share a common need for adequate supplies of uncontaminated water. We benefit from water that is clean, and we are penalized by that which is dirty. This is why I say that water pollution is a problem of the people.

Attempts to categorize beneficiaries of clean water in such general terms as fisherman, picnickers, and nature lovers is, to my mind, as erroneous as arguments that purport to show that certain interests would bear inordinate financial burdens should pollution abatement programs be accelerated to anywhere near the scale held necessary. The head of the family ends up paying the bill regardless of the pollution control philosophy that is followed. He pays it in the form of extra cents on his shopping bills when the costs of industrial water treatment facilities are passed to the consumer. He pays the costs as taxes which are levied to underwrite municipal, state, and federal programs.

The people pay in another way

when pollution abatement responsibilities are ignored. They pay by having to live with recurring water shortages, blighted neighborhoods, impaired health, loss of industrial, business and real estate revenues, and sacrifice of social, cultural, and recreational opportunities. When waste treatment belatedly comes to those many areas where it has been delayed, the people still are going to be out-of-pocket.

Brief illustrations of how clean water can unite the extremes of recreation and industry are found in presentations delivered at the recent annual meeting of the Society of American Foresters. Director DeWitt Nelson of the California Department of Natural Resources noted that an intensive study in his state showed that fully 60 per cent of all recreation is water-orientated. Californians put about 55.6 billion miles on their automobiles during 1960; about one-third of the total, 17.6 billion miles, was for social and recreational purposes.

The first question industrial representatives ask in Pennsylvania, said Maurice K. Goddard, secretary of the state's Department of Forests and Waters, is: "Can recreational needs of our employees be met close to home?" The industry looks elsewhere when these needs cannot be met, and an opportunity for community economic enhancement is lost. Have you noticed how often water recreation opportunities are held out both by advertisers of industrial acreage in Florida and by industries seeking employees to move there?

Some appraisals of the threat of water pollution overlook achievements that have been and are being made by industry, agriculture, and local, state, and federal units. Progress has been made in a number of important ways. The industrial reuse of water appears to be increasing. Advanced processes are extracting noxious substances from effluents, and commercial uses are being found for the byproducts. Industrial plants are using sewage effluents in their cooling cycles. Basin-wide soil conservation programs reduce silt pollution, and some notable research, enforcement, and construction records have been achieved.

The record shows clearly, however, that these efforts collectively fall short of the mark. They are too few and too isolated to have substantial impact. Their overall contribution to ridding the nation's waters of wastes is comparable to an underpowered river boat on an upstream mission. The helmsman barely can succeed in keeping the craft headed into the current.

Much more must be done. Research must be accelerated and the findings applied. Industry should recognize pollution abatement as a regular operational expense.

A contributing factor to the present dilemma is the number of people who persist in viewing water courses as sewage and waste disposal channels regardless of the difficulties imposed on others. Some polluters express reluctance to install costly facilities because available technology promises less than a complete reduction of the offensive wastes. They contend that little is gained by reducing the contaminant level by 80 per cent if the remaining portion still renders the water course useless.

Fortunately, those points of view are being isolated by a countrywide tide of understanding and circumstances. The deterrent in 1960 to a forceful attack on water pollution is a clash of philosophies on how the mission should be accomplished. Few persons continue to question the national menace of water pollution. It is identified in the public mind as a serious and widespread threat.

The public now asks two questions. What programs are needed to combat this menace? When is a reasonable attack going to be launched?

Inspired, dedicated, and as well-equipped as the staff personnel may be, state programs are hampered by the unwillingness, reluctance, or inability of the legislative bodies to provide necessary appropriations. Funds for state agencies have nearly tripled in the last decade, rising from $2.2 million in 1950 to $6.5 million last year. The average state and jurisdictional investment in 1959 was approximately $130,000, a grossly inadequate sum. This weakness is further underscored by the realization that 40 per cent of the $6.5 million was invested by four states. Expenditures by the remaining states and jurisdictions averaged $80,000, which means that comparatively few dollars were available for active programs after salaries and other administrative expenses were met.

The federal contribution to state programs last year was $2.6 million. Federal funds have comprised between 28.7 and 29.5 per cent of the states' programs during the past three years. The record also shows that state investments fell off during the years 1953-56 when federal assistance was not available.

You are acquainted with the federal grants program for the construction of waste treatment facilities, I am sure. Its contribution to the overall effort is well documented. You know that this program is stimulating nearly $5.00 in local expenditures for each $1.00 invested by the federal government. Grants to more than 2000 communities have resulted in the construction of projects estimated to cost in excess of $1 billion.

Federal grants and assistance programs to the states are not recent innovations. The first began in the 1870's. Some have been questioned as to their national character, but most must be consistent with the desires of the people or else they could not persist.

It is my personal opinion, and one which apparently is held widely, that the federal program of grants-in-assistance for the construction of pollution abatement facilities presently is one of the best approaches to this national dilemma that is making clean water a scarce resource. I say best for a number of reasons.

Foremost among these is the interstate character of much of our water and the dependency of all of us on that resource for individual and national well-being. Federal investment for the protection of our surface and ground water supplies is fully as vital to our national life as are expenditures for defense, post office, transportation, and agriculture, to name a few.

A second reason for my believing that clean water is a sound national investment is that no other effort in the history of this problem has made any significant progress in controlling this threat. The evidence of failure is all about us. A good example is Washington, D. C.'s Rock Creek, which is the nucleus for the Capital City's world famous park. " Polluted Water" signs confront the thousands of men, women, and children that take their recreation there each year.

Only three states have substantial grants programs for assisting municipalities in meeting their responsibilities for constructing water treatment facilities. They are Maine, Maryland, and Vermont. Several others—California, Indiana, New Hampshire, New York, Ohio, Oregon, and Pennsylvania—either have limited revolving loan funds, guarantee purchase of project bonds, provide assistance for plans, specifications and estimates, or contribute to project operation and maintenance expenses.

State leadership towards solving water pollution problems continues to lag. This failure was one of the motivations for enactment of Public Law 660, and the dim prospects for

(*Turn to page* 63)

GOING? **The elms**

WHAT'S HAPPENING TO OUT

ACCORDING to the Bible, "In the beginning when God made the world, He created trees and saw that they were good." (Gen: 1-12.) Is man destroying these beautiful trees? Today our forests are rapidly being destroyed by fires, diseases, and by man himself.

What can we do about stopping the destruction of our woodlands and shade trees? First, we have to determine what part man is directly responsible for and what part of natural tree destructive elements he can help to eliminate.

Of course, woodlands destroyed by fire can frequently be attributed to man. A careless match, a burning cigarette, a campfire not properly extinguished, or some other careless act is often the responsible factor.

Young timber can be destroyed by careless lumberjacks in the process of cutting the larger timber. Land clearance is also taking a large toll on the suburban tree population, as the bulldozers prepare new home sites. Many trees are being removed without comprehension by tree surgeons that are unqualified in diagnosing tree diseases. In many instances, the tree could have been saved with the proper diagnosis and treatment.

Man can spread diseases with the tools he uses, such as the pruning saw, the axe, and various other instruments. All tools should be sterilized before working on any tree to prevent the spread of disease. This can be done by wiping the tool with a rag saturated with bichloride of mercury or the common alcohol used as radiator anti-freeze.

Remember the elms, oaks, maples, and chestnut trees that grandfather used to be so proud of? What's happened to them? Trees seemed so healthy, so vigorous and stately, when we were young. Oh sure, trees died in grandfather's day too, but not to the extent that they are dying today. Not too many years ago, the American elm was a prominent tree in our country's landscape; today it is rapidly becoming extinct as disease continues to destroy this stately tree.

The elm tree, subject to attack by the Dutch elm fungus and the Phloem necrosis virus, is almost eliminated from the planting lists of foresters and nurserymen. Dutch elm disease was brought to this country from Europe about thirty years ago and has spread rapidly since that time. Starting in the New England states, the disease is now as far west as Colorado.

Phloem necrosis and Dutch elm disease are spread by insects, the leaf hopper and the elm bark beetle respectively. There is no known cure for either disease at this time; once the tree is infected, the best insurance is to remove it as soon as possible. Preventive measures such as spraying and removal of affected trees will assure the protection of those unaffected and reduce the spread of the disease. Unless a nationwide co-operative program is started to protect our trees from Dutch elm disease and Phloem necrosis, with all municipalities taking part, the ultimate loss of the elm tree is almost a certainty. The question is, how long can this magnificent tree endure the perils that confront it?

The chestnut blight was brought to this country from the Orient early in the 1900's, in a shipment of young chestnut seedlings for a nursery in the eastern part of the United States. Ten years later, the blight had spread to more than half the chestnut trees in the nation, and today the chestnut tree is almost completely extinct.

Many of the mighty oaks have succumbed to the disease known as oak wilt, which disease has spread through our forests with amazing speed during the past ten years. Foresters are still in doubt as to just what causes the disease to spread so rapidly and why it skips certain woodland areas to destroy others.

The sycamores, what's happened to them? Remember how they used

GOING? **The oaks**

GONE? **The chestnuts**

TREES?

By **EDWARD J. SCHRADER**
Commissioner of Forestry
City of St. Louis, Missouri

to line city streets and beautify our parks? Now they, too, have joined the rat race in their fight for survival. Canker disease has destroyed thousands of these shade trees throughout the eastern and midwestern cities. Canker of the plane tree or sycamore is a fungus that enters the tree through various cuts, wounds, and scars. A boy can cut his initials on an infected tree with a pocket knife, the knife becomes contaminated, and as he moves to a healthy tree to do some more carving, so does the disease. There is no cure for canker disease. We must take preventive measures to save the healthy trees. Removing infected trees and sterilizing tree pruning equipment would be a good start in saving our sycamores.

How effective are we in controlling the diseases that are destroying our forests and shade trees? Are the chemical insecticides we are using efficient in the control of disease-bearing insects? What effect do these chemicals have on the insect, and do they become immune to the toxic chemical materials we are using? Are we destroying birds and insects that feed on the disease-transporting insects? Are insecticides being applied at all for the control of various diseases? What are you doing as an individual to protect your trees? Are we providing places for insects to hibernate and breed, by not removing dead trees in our yards as rapidly as possible? We must know the answer to these questions if we are to protect and save our trees.

What is the answer or the formula that we can follow to save our trees? We certainly should, and must, take more definite interest in the shade trees of our cities and the forests of our nation. In my opinion, this may be accomplished in three progressive steps. First, we must provide more educational projects to enlarge our understanding of forestry problems. Second, we must encourage more participation, more interest in forestry and conservation programs. Third, appropriations must be increased to carry out more extensive programs of maintenance and improved methods of preservation by experimental and research departments, state and city foresters, and those engaged in the field of conservation.

The care of trees is a never ending obligation, and because it can be a rather costly operation it is often by-passed for some service that seems more important. Many municipalities have learned through experience that deferring shade tree maintenance is far more costly than appropriating the necessary amount to do the job each year.

Trees that line our streets, provide our forests, and landscape our homes make our towns and cities more beautiful. We couldn't enjoy a city without trees any more than we could a yard without grass. What would become of our parks and playgrounds? Could our children enjoy them? Of course not.

As our modern cities grow and progress, the number of trucks, buses, and automobiles also increases. As a prominent college professor recently stated, "For every automobile and truck that expels poisonous gases, at least a hundred trees are needed to consume these gases and transpose them to pure oxygen." So trees are a necessity, if we are to provide a healthy and normal life for our children.

It is generally conceded that a shade tree approximately 24 inches in diameter is valued at close to a thousand dollars. Thus a city with 100,000 trees would have a very large asset. It seems good business, if nothing else, to protect such a valued investment. Trees, like any other business, must have a product to produce if the stockholders are to receive their share of the profits. If we consider happiness, beauty, and refreshing shade for our children worthwhile products, then we are receiving the dividends that God so intended when He created trees in the beginning of time.

DON'T SELL FREE ENTERPRISE IN RECREATION SHORT

By C. R. AGNEW, JR.
Executive Vice President
Camping Council for Travel and Wilderness Campers, Inc.

CAMPING today is one of our important outdoor recreation activities. During the summer vacation period five to ten million family campers crowd the government and private campgrounds throughout the country. Broadly speaking, family campers can be divided into two categories: 1) Those who take a camping tour—visiting a number of different campsites. These may be called "travel campers." 2) Those who spend their vacations camping in one spot, and whom we may call "vacation campers."

Whatever the type of camper, it is probably fair to say that for a majority of them camping is not an end in itself. It is a means of participating in various forms of outdoor recreation and of doing so at very low cost. In a sense, therefore, camping is a common denominator for many kinds of outdoor recreation. A primary motive inducing the family to camp is that of economy—the entire family may enjoy a vacation together and participate in various outdoor activities at very modest cost. Because camping is related to so many other types of outdoor recreation, an analysis and a solution of our camping problems may well serve to assist in solving other outdoor recreation problems too.

A brief review of the history of the camping movement will be useful. Around 1920 campers first started coming to our national parks and forests in numbers. In the beginning, few restrictions were placed on campers and the chief concerns were to see that they did not start forest fires and that they took proper care of camp sanitation. No fees were charged to campers for camping, but in the early days there were very few if any prepared facilities for campers. Over the years campers increased in numbers and the National Park Service and the U. S. Forest Service found it necessary to restrict the activities of campers, to require that they use only designated campgrounds, and to provide certain facilities in the interests of good health and sanitation. Today our national government provides campground facilities which represent an outlay of many millions of dollars. All of these facilities are provided free of charge to the public. In addition, the government must spend additional millions of dollars each year in order to maintain and ad-

Recreation facilities on national parks and forests are either free or low cost

Trying to keep pace with the demand for outdoor recreation facilities on the national forests and parks is costing government millions of dollars to build and maintain areas

minister these campgrounds.

State governments have also created parks, many of which have campgrounds. The states generally have established a fee system and make a charge for the overnight use of a campsite. The state campsite fees, however, are as a rule low; in the aggregate, revenue received from campsite fees is insufficient by a considerable margin to cover annual costs of maintenance, administration, and amortization of capital costs. Substantial subsidies to the camping public are therefore involved.

Today our national park and forest campgrounds are overcrowded, as are our state campgrounds. Why are we not able to provide the necessary facilities? Under most circumstances under a free enterprise system, when a demand occurs, an economic supply generally responds to meet this demand. This was ably pointed out by Dean Henry J. Vaux in an address at American Forest Products Industries, Inc. entitled "How Can the Nation's Forests Best Serve the American People?" In the case of the demand for camping, the supply of camping facilities in sufficient quantity has not been forthcoming because the government is supplying campsites free of charge or at fees which are substantially below costs of operation; this acts as a very serious deterrent to the private entrepreneur to create campground facilities. The national and state governments have constantly increased camping facilities, but there is a limit to the funds which may be appropriated for campground purposes and these limits have apparently been reached.

Dean Vaux in his address has very clearly explained why free forest recreation is obsolete and why there is no justification for a continuation of free camping on government lands. The government is, in fact, compounding its own difficulties. By its free camping policy the national government loses the opportunity of gaining considerable revenue which could be devoted to improved camping facilities, and this same policy deters private enterprise from creating facilities which would meet today's burgeoning recreation demands. There is, therefore, very good reason to impose user fees in our government campgrounds today.

The small entrepreneur is loath to expand capital funds to create a campground in a region where government campsites are offered free of charge. It is possible that he might receive some overflow business, but at best this would be a precarious existence. When the traffic falls off, most of the campers might be expected to go to the free facilities. The low fees of some state parks have also acted as a brake on the creation of private campgrounds. While in many states private campgrounds have not sprung up due to this situation, we find that in other states private campgrounds are starting to operate and apparently are thriving. This is encouraging because it is taking place in spite of all the adverse factors existing today in the form

(*Turn to page* 56)

Three girls "cool off" in a clear, cold stream in Three Sisters Wilderness Area

Having made the big climb to the edge of the Three Sisters Wilderness Area, members of patrol look back at Todd Lake Base Camp which they won't see for seven days

Babes in the wilde

Photographs by Lee Prater, U.S. Forest Service

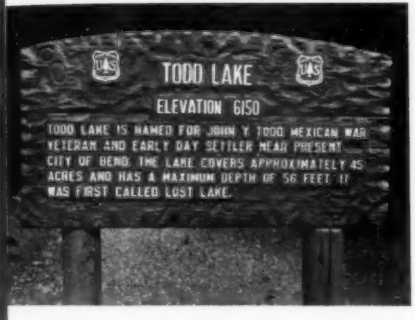
Anniki Souminen, Soumi, Finland, peels an orange for a snack while waiting for her patrol's turn to head out for their seven days and six nights in wilderness area

Lucille Tegg, assistant director, leads girls in a campfire sing at base camp. This first campfire was held on second day of encampment

Forest Service Ranger Dick Chase instructs his assigned patrol in the use of compass, reading maps, land marks to watch for, etc., to help them on their wilderness hike

Karen Krisp of Florida (r.) makes adjustment on Ohioan Cherry Moore's pack just before their patrol begins the trek

Todd Lake Campground in the Deschutes National Forest served as base camp for Girl Scouts 1960 All States Encampment


TODD LAKE
ELEVATION 6150
TODD LAKE IS NAMED FOR JOHN Y. TODD MEXICAN WAR VETERAN AND EARLY DAY SETTLER NEAR PRESENT CITY OF BEND. THE LAKE COVERS APPROXIMATELY 45 ACRES AND HAS A MAXIMUM DEPTH OF 56 FEET. IT WAS FIRST CALLED LOST LAKE.

Betty Gene Alley (right) Encampment Director, greets Farida Ghani from Pakistan at Todd Lake Camp

berness

For seven days and six nights 114 Girl Guides and Girl Scouts explored the magnificent Three Sisters Wilderness Area in the Oregon Cascades. Without any adult supervision during their wilderness adventure, the girls proved their mettle by successfully utilizing basic skills, developing creative and imaginative programs, and assuming responsibility for their own leadership

Regula Ganz from Brugg, Switzerland gathers wood for her patrol's campfire

ONE hundred and fourteen Girl Scouts and Girl Guides enjoyed a unique experience last summer—camping alone in the Three Sisters Wilderness Area without any adult supervision. These girls had come from all over the world to participate in the first All States Wilderness Encampment in Deschutes National Forest.

Todd Lake Campground served as the base camp for the 2-week encampment, which was under the capable supervision of Betty Gene Alley, national director of camping activities for the Girl Scouts. Here the girls, ranging in age from 16 to 18, were organized into patrols and prepared for their wilderness expedition. A Forest Ranger was assigned to each patrol to show the girls how to use their compasses and maps, landmarks to watch for, places to go, and giving all the woods lore he could in the brief time he had.

The girls packed their own food and gear for their 7-day wilderness adventure. Everything they wanted or needed had to be carried on their backs. Many of the girls carried as much as 45 pounds. Then, after a last look at their base camp, the girls hiked off into the wilderness—each patrol with a different itinerary. They were on their own, free from time and schedule. Their only thought was exploring this magnificent wilderness area.

Hiking in patrols, the girls each had a specific responsibility—patrol leader, life saver, recorder, health and safety, etc. They prepared their own food in tin cans over campfires and slept in the open in woolen sleeping bags. The girls enjoyed taking pictures of the unspoiled wilderness area and studying wildlife and vegetation around them.

Although the girls were on their own in the wilderness, every effort was made to guarantee their safety. Members of Rim Rock Riders, a Bend, Oregon saddle club, patrolled the perimeter of the wilderness area. Forest Service men scanned the area from lookout towers. A mirror flash from the wilderness area was the distress signal.

After seven days and six nights in the wilderness the girls returned to the base camp exclaiming, "It was just wonderful."

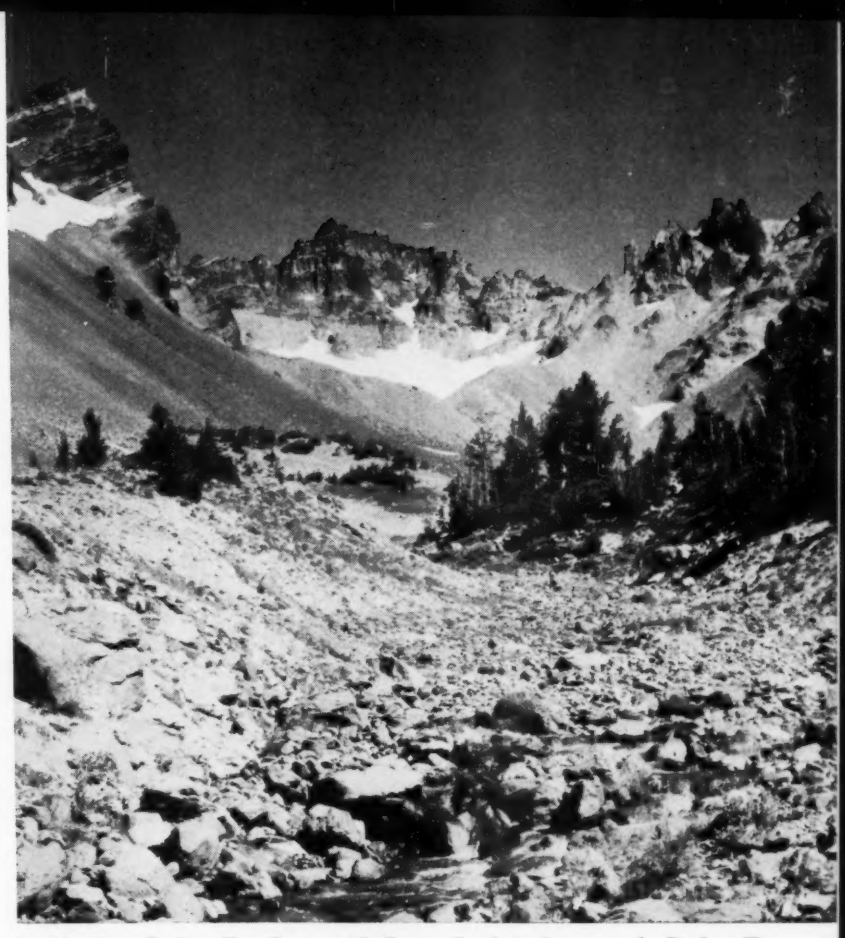
Everything they would need on the hike had to be packed on their backs

Maxine Ruppel, an adult leader, photographs a patrol's base camp

Mary Ellen Cheney, Michigan, at an orientation map session

Ineke Molier from S. W. Africa (l) with Betty Gene Alley and Bill Parke of Washington Office, Forest Service, Recreation Division, who worked closely with Girl Scouts in planning encampment

Karen Orlowski, Pennsylvania, and pack—complete with Smokey Bear doll. The local lumber industries at Bend, Oregon presented dolls to each girl at the camp. And, yes, she toted that pack and Smokey over the entire trek!



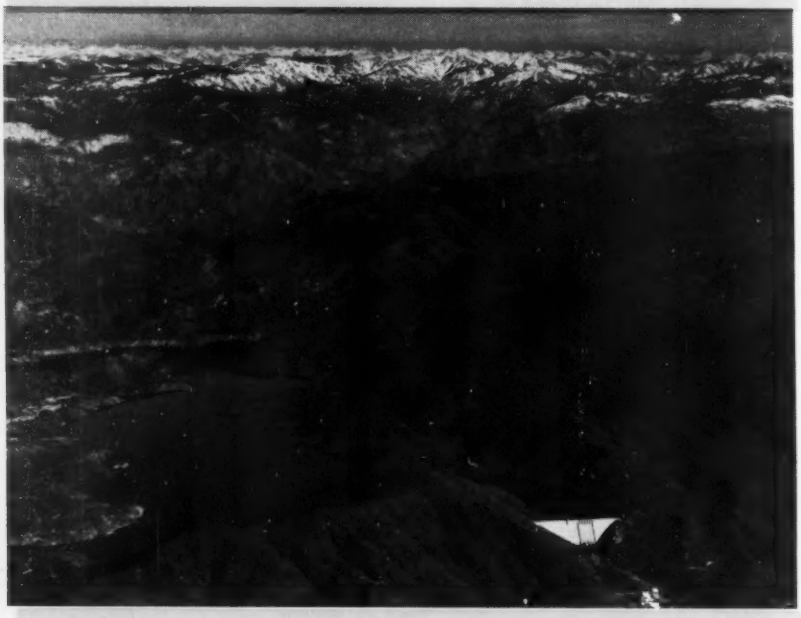
Looking into Broken Top Crater with Crater Creek in foreground. Broken Top Mt. left of center is peak some of the girls climbed, however, they used back side

Girls used all of their handicraft skills to make things comfortable

Camping in the pristine glory of Three Sisters Wilderness Area, girls warm themselves on a chilly morning while breakfast cooks. Broken Top is in background

The River that gives—

BY DON CARLOS MILLER



Here the Kings begins, high in the Sierra snow-banks, and here it is retained by the Pine Flat Dam until needed. The reservoir can store 1,100,000 acre feet of water

The Kings River, too small to be listed in The World Almanac, irrigates more land than any other river in North or South America, is a leading source of energy in the West for power generation, and provides pleasure for people who come from all parts of the country

OUT of the mountains it comes—out of deep-echoing chasms, out of still and shaded pools, out of brown, round hills. The river is a live thing, and running; it sings with its running. It sings of snowbanks and redwoods, of wild creatures drinking—of living and more living.

Out of the mountains it comes into the warm and still lands, where bees and tractors hum and the earth is thirsty with a thirst that is a craving. And there it ends; there the river ends, and is a failure.

It is a failure because anyone knows a river's goal is the sea, or at least a shimmering lake where people loll and play and zip about in boats and on skis. But, although this river does have a lake or two along its way, its end is a series of lone trickles out in the flat-lands of the San Joaquin Valley.

And there it is done and gone—

Fresno Canal, part of distribution system. Back-ups control the water level

Here the Kings, shown in the lower portion of the picture, loses some of its water. Two channels leading off left of center are canals taking water to Sanger and Fresno

even forgotten. But before it comes to this seemingly ignominious conclusion, the river serves a multitude of purposes. Few rivers, large or small contribute so much—give themselves so completely.

As rivers go, the Kings of central California is a small stream. Actually, its full name, "El Rio de los Santos Reyes," is almost longer than it is. Anyone with good eye-sight, standing on any of countless peaks in the midst of its beginnings, can look out upon the land where it ends.

Or, if one would rather not climb to 13,000 or 14,000 feet, he can stand where one of the trickles seeps its last into the lush land and look up to the gleaming peaks and say, "You began up there, a trickle out of a snow-bank that joined other trickles and became a creek and later a river. And, after a short but eventful life, you were dispersed into canals and finally trickles, and here you are, ending within sight of your beginning."

But this small stream, so insignificant that it is not listed in *The World Almanac* even though 139 rivers in the United States are named there, irrigates more land than any other river in either North or South America. In fact, it is third in the world, with only the Indus of India and the Nile of Egypt irrigating more land.

Slaking the thirst of the earth, however, is not the only accomplishment of the Kings. It is one of the leading sources of energy in the west for power generation; its waters are a constant pleasure for thousands of people from all parts of the country. And a portion of this mighty little giant of rivers has carved out a gorge in the midst of the massive granite peaks that is known the world over—the fabulous Kings Canyon National Park.

It was January 6, 1805 that a Spaniard, Captain Gabriel Moraga, and a small party "discovered" this pleasant stream running quietly across the flat valley. Since it was the day of the Feast of the Epiphany the Spanish named it "The River of the Holy Kings."

At the same time Moraga found many Indians living along the river. They had "discovered" it unknown years before Moraga, had lived there for generations beneath the cottonwoods, the oaks, and the willows, truly feeding upon the fat of the land without either tilling or industrializing.

The history of the Kings since the coming of the white man is replete with violence—some of it man-made. In the 1860's venturesome farmers began taking of the water that flowed so freely. At that time there seemed plenty for all, but this

More than one million acres of land are irrigated with water from Kings River

The Kings provides visitors with a continuous supply of water for swimming, fishing and boating. Several new resorts as well as campgrounds are being built near its banks

situation was only temporary.

Because Leland Stanford and other planners of the Central Pacific saw an irrigated wheat field, with its greenness standing like an emerald island in the sear, hot plains, they changed the course of the railroad and set up Fresno Station miles from where they had originally intended.

Settlers came quickly to this land and the water was soon in short supply, for most of it came down in sudden rushes during winter or spring floods. Almost at once the haggling began; shortly, over 200 disputes were in the courts with little likelihood of amicable settlement. But when the whole struggle seemed hopeless, a compromise was reached in 1918—this after nearly 50 years of constant strife. The water was apportioned and a water-master appointed to see that each irrigation district received its just share.

But the Kings itself was not always supine, either. Upon occasions it rose with the suddenness of a tornado, leaving a path of havoc. It washed out many of the first canals; it gouged at the farm-land, tore houses from their foundations, destroyed bridges and stock. Whereas its normal flow ranged anywhere from a few hundred second feet to 10,000 second feet, (a second foot is a cubic foot of water or the number of cubic feet passing a given point within a second of time), depending upon the season, it often jumped far above these figures. The worst recorded flood was in late November, 1950, when the Kings arose to 110,000 second feet and did untold damage.

However, this was the river's swan song in flooding, for even then the Corps of Engineers of the United States Army was building Pine Flat Dam astride the stream at a point 27 miles east of Fresno. This monolith of steel and cement was completed to a height of 440 feet in 1954; there seems little chance that the Kings will ever again leap out of control, for the reservoir behind the dam can hold 1,100,000 acre feet of water.

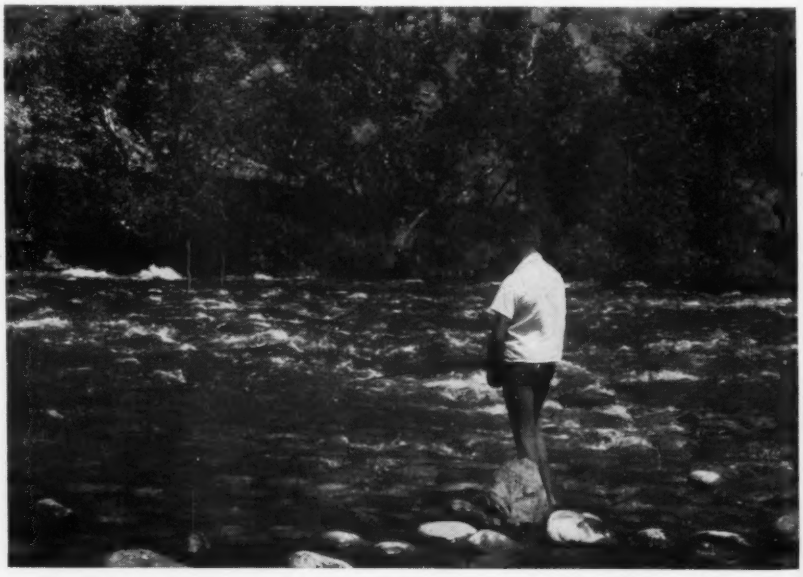
Moreover, Pacific Gas & Electric Company, America's largest privately-owned public utility, has constructed two storage dams on the North Fork of the Kings. These, Courtright at an elevation of 8,184 feet and Wishon, which is some 1,500 feet lower on the stream, have an additional storage capacity of nearly 300,000 acre feet of water. The three dams can contain nearly

(*Turn to page* 68)

Kings flows through fertile San Joaquin Valley, one of the world's great farming areas

Wishon Reservoir, one of three built on the Kings to contain the average annual flow

Fishing is popular all along the Kings. Here rapids below Piedra draw hopeful angler



The Wahlenberg Study

By KENNETH B. POMEROY

"LOBLOLLY Pine," a monograph of direct value to woodland owners, practicing foresters, students, professors, and scientists, deals with the establishment, protection, management, and utilization of the second most valuable tree species in the United States. Written by W. G. Wahlenberg, this book brings together in one volume the findings, conclusions, and recommendations of more than 600 scientists. Their 1500 reports, more than half of them made within the past decade, cover every conceivable facet in the life of a loblolly pine.

Beginning with the origin of the name, the book discusses the species and its environment, nutrition and soils, root and shoot growth, protection from fire, insects, diseases, animals, and climatic factors, selection of seed trees, seedbed preparation, direct seeding, nursery practice, planting, release of seedlings, opportunities for species improvement through genetics, growth and yield, spacing requirements, thinning, pruning, harvest procedures, utilization, marketing, financial returns, management for purposes other than timber production, characteristics of the wood, pulping properties, defects and grades of lumber, seasoning, preservative treatments and a host of related topics.

Loblolly pine originally occupied lowlands bordering swamps, savannas, and pocasins. On these moist sites it was protected from fire. When the colonists abandoned worn-out fields, young pines soon established themselves. The succession of plants usually was crabgrass immediately following the last cultivation, horseweed during the first years, aster in the second year, broomsedge in three to five years, pines within the first 10 years, and understory hardwoods after 20 years. As the forest matured, hardwoods gradually replaced the pines, filling in the openings when old monarchs died and keeping light-hungry young seedlings from becoming established. But the loblolly pine's ability to reclaim burned areas and abandoned fields enabled it to extend its range to 27 per cent of the commercial forest area in 14 states from Delaware to Texas. When virgin suplies of longleaf pine began to decline around the 1860's, loblolly pine came into the lumber market as North Carolina pine. For the past 50 years about half of the total annual harvest of southern pine has come from lobolly pine stands that "volunteered" and matured without the benefits of scientific silviculture. As a result about one-fourth of all the softwood lumber manufactured in the United States comes from this valuable species. It has also become a mainstay of the southern pulpwood industry within the past 20 years. Consequently the production of continuous crops of loblolly pine has become an important objective of the managers of the South's five-billion-dollar-a-year timber industries.

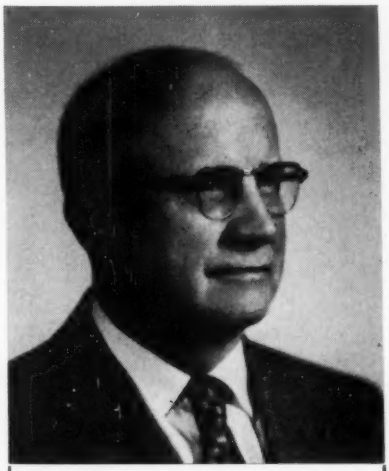
The annual growth rates of loblolly pine on average sites range from five to eight per cent. It will grow on a wide variety of soils, varying in texture from sandy loam to compact clay. It thrives at elevations of less than 500 feet where the annual rainfall is between 40 and 50 inches. A drought-hardy strain has adapted itself, however, to portions of Texas where rainfall is 10 to 20 inches less each year.

The tree, although intolerant of shade, grows well in association with 65 other species. It usually dominates the overstory of any forest in which it is found.

Perhaps loblolly pine's crowning achievement has been its ability to displace King Cotton on the worn-out fields of many Southern farmers. On comparable sites loblolly pine produces four to five times more cellulose per acre annually than cotton does. On short rotations it even excels the fabulous Douglasfir of the far West.

Great as are its many attributes, loblolly pine also has some peculiarities. It does not grow in the same manner under all environmental conditions, and treatments that work well in one area may have detrimental effects elsewhere. Consequently alert woodland owners will find it worth while to invest $7.00 in this up-to-date management tool.

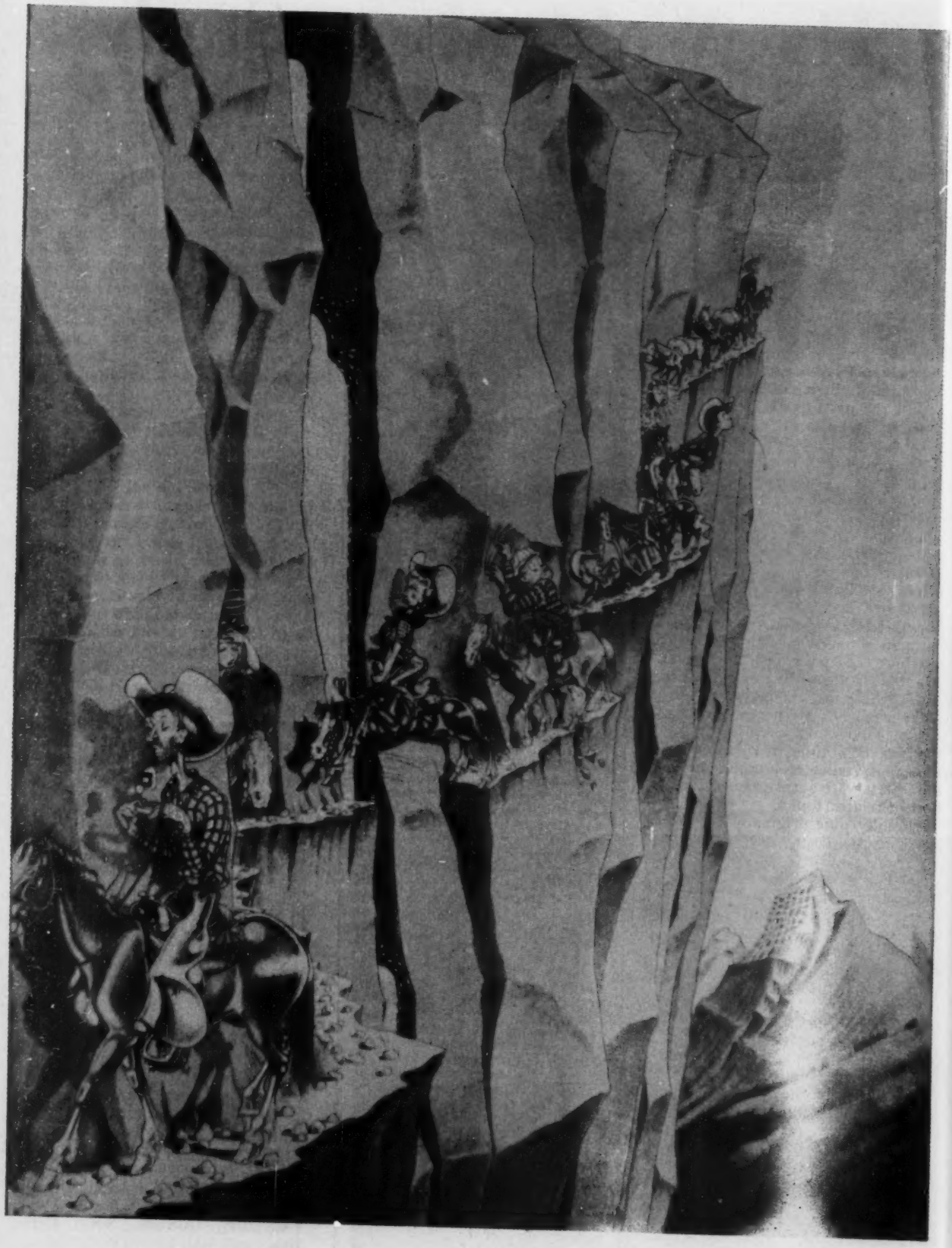
Copies may be ordered directly from the School of Forestry, Duke University, Durham, North Carolina.



W. G. Wahlenberg

W. G. Wahlenberg has devoted a lifetime to silvicultural research. For more than 30 years he has worked with southern pines. He is the author of the reference book, "Longleaf Pine," published in 1946 by the C. L. Pack Forestry Foundation. Before the term "prescribed fire" had been invented he fought an uphill struggle for the acceptance of fire as a tool in the raising of longleaf pine, a fight now long won and established. Scholar, researcher, dirt forester, experienced in southern pine culture from east Texas to Virginia, Mr. Wahlenberg is uniquely qualified to compile this treatise on loblolly pine, the species that has displaced King Cotton on millions of southern acres. Regeneration, sustained yield, the responses of the forest — these things have concerned him always. Noting failures as well as successes, poking into ecological mysteries that have no end, men like this are responsible for the renewal of America's greatest renewable resource.

Mr. Wahlenberg grew up on a farm in Connecticut and received his forestry education at University of Maine and Yale School of Forestry. Since joining the U. S. Forest Service in 1919, he has authored nearly fifty scientific papers on nursery practice, planting, natural reproduction, forecasting timber growth, white pine silviculture, and the effects of fire and grazing on southern pine lands. He did outstanding work at the Crossett Experimental Forest at Crossett, Arkansas, and in 1947 he was moved from the Southern Station to the Southeastern Forest Experiment Station where he became Assistant Chief of the Division of Forest Management. In 1954 he received the USDA Certificate of Merit and in 1955 began the loblolly pine monograph. In 1957 he was made a Fellow of the S.A.F.



A Cartoonist Looks At Trail Riders

THESE two cartoons seem to offer proof that we Trail Riders never know what the packer is thinking when he passively watches you cinch up your horse as he rolls a cigarette one-handed.

The drawings taken from life are by Stewart Cameron who might be said to have learned the Trail Riding business from the ground up. At 14 he went on his first mountain trip near Calgary in the Rockies. After picking up the art of packing and shoeing horses from his many cowboy and old-time rancher friends, he was soon able to make his way around the hills with his own string of pack horses.

Stewart used a camera originally to record the foibles of both the dudes and veterans he escorted over the passes and through the valleys. But somehow the photos just didn't get it down the way he actually saw it. Pen and pencil came next and the drawings on these pages are just two of the many Stewart has on tap. If you would like to see some more of them, just let us know.

It was never definitely established whether Stewart finished his schooling or it finished him. When he started to cartoon he soon found outlets for his work in the Calgary newspaper and later did a hitch on a Vancouver paper. Later, Walt Disney lured him to Hollywood for a tour of duty where studio officials thought Stewart's cowboys and dudes were "awfully lifelike."

But, every summer, whenever possible, finds Stewart roaming the mountains with his pack horses. As shown here, he particularly relishes drawing parties riding through timber windfalls and along narrow ledges. But when he really goes wild is when he depicts a dude trying the well-known Diamond Hitch. As all Trail Riders know, of course, this is the final overall tie which lashes the entire pack down securely to horse and pack-saddle. There are many variations of this hitch even among professionals and there are many, many more among dudes according to Stewart—and he's got the pictures to prove it.

For many years Charles Delaney worked tirelessly trying to buy back his land

Mrs. Sophronia Delaney sold land with understanding it could be repurchased

The Delaney's Fight Back

BY ED KERR

MRS. Sophronia Smiley Delaney, a central Louisiana widow, was shocked one October morning in 1941 when a government agent, a representative of the Quartermaster Corps, stated his business.

"Mrs. Delaney?"

"Yes?"

"The army needs your 160 acres as part of an artillery range for Camp Claiborne. I'm prepared to fill out the necessary papers immediately if it's convenient to you."

Of course, he went on to say, adequate payment would be made for the deed to the land, she could be assured of that. What, she didn't want to sell? Why, lady, this land has been judged necessary for national defense. One has no choice in the matter: either it's sold willingly or it will be gained through court action. At such times of emergency, you see. . . .

Mrs. Delaney understood the vital need at hand, but it helped little to calm her anxiety. This had been her family homeplace ever since her grandfather homesteaded it long before the Civil War. It was not just a piece of ground; it was a family heirloom entrusted to her care. And her children—three strapping boys who loved the country life—were entrusted to her care too. Having lost her husband only two months before, she viewed the prospects of losing the family homeplace much like a nightmare, but she had no choice. She didn't quibble over the price of $2500 the government offered, but she did want it understood that she could buy the property back when it was no longer needed by the Army. The agent agreed but, unfortunately for her, no mention was made of this agreement in the deed. As we will see, this omission was to cost her oldest son nearly every hour of his spare time for 11 years!

It wasn't until 1947 that the War Assets Administration got around to disposing of Camp Claiborne lands. In September of that year, Mrs. Delaney received a letter from the Alexandria office to the effect that the Surplus Property Disposal Act of 1944 had set certain priorities for surplus property acquisitions. The priorities were listed as follows:

1) Government agencies, 2) Reconstruction Finance Corporation for resale to small business, 3) State and local governments, 4) Former owners.

The list goes on further to include veterans, etc., but the important point was that former owners were given fourth priority—even behind small businesses established for the purpose of buying surplus property from the RFC to sell for profit. Mrs. Delaney was horrified. She called the Alexandria office of the WSA immediately and was told that this was the law. All she could do now was to wait and see if the first three priority brackets exercised their options. When she called again in a few days, she learned that the U.S. Forest Service had acquired it.

When her oldest son, Charles, returned home from three years of service, the news made him fighting mad. Immediately, the Delaneys held a family conference and decided upon a line of attack. They reasoned that their only argument lay in the fact that the government representative had promised them they would be able to buy the land back when the Army had no further use for it; therefore, they had to find that man. Charles worked on this approach for almost three years, but found his path strewn with disappointments and frustrations that were tied into bundles by red tape. He talked with other landowners in the same predicament, but many of them didn't care to have their land back. Others chalked up the project as hopeless, pointing out that "the law is the law and that's that." The fact that "you can't fight city hall" was the sum total of feeling among most of the other owners.

They were just about right. Charles found out that the government agent who handled the transaction had been a representative of the Quartermaster Corps, but this function had since been taken over by the Corps of Engineers. Too, the Department of Defense was formed after the war and with it came a multitude of administrative changes in organization. It took letter after letter to arrange even a rudimentary outline of chains of command. After three years of searching, interviewing, and writing to everyone who ever had a list of personnel, his first attack was completely repelled. Delaney finally had to admit it was true: It was utterly impossible to find the name of the man who had handled the land transaction!

Army lingo would term Delaney's next move as a strategic withdrawal. He was called back into the Army in 1950 during the Korean conflict and, when he returned two years later, went to work for the state forestry agency as district forester of a district some 50 miles north of Alexandria. While his assignment took him away from the immediate

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Reading about RESOURCES

By MONROE BUSH

The Summing Up

WHO of us can hope to achieve a bird's-eye view of anything more complicated than his own backyard, or his job? Where are the Leonardo da Vincis and the Francis Bacons among us? These were men whose perceptions could encompass great areas of the public life. The sad truth is that our country is such an enormous complex, and the subjects of its life so numerous, that only a gifted few can hope for a comprehension of more than a minute cross-section of American life.

This is true not only of political, social, and economic issues, but of the scientific domain as well. The sciences remain virtual strangers to one another today—this is a matter of grave concern. Too often the historic development of a particular science or discipline is only a fuzzy, confused impression to its present-day specialists. Hence the work of good men suffers from an ignorance of their own fields, and of the relationships that exist between disciplines.

Such conditions give an added emphasis of urgency to the publication of **American Forestry: Six Decades of Growth** (The Society of American Foresters, Wash., D. C., 1960. 320 pp. $5.00). It is only by a major effort of this kind that a primary discipline can be pulled into focus for its practitioners, and for specialists in other fields who seek something more than the provincial view.

Prepared under the direction of the Society of American Foresters, in recognition of the 60th Anniversary of this distinguished fellowship, **American Forestry: Six Decades of Growth** is a broad resumé of the evolution of forestry and an account of the many facets it has attained today. The resulting picture is clearly that of both a science and an indispensable economic tool in the growth and resource-stability of the nation. Editors Henry Clepper, the executive secretary of the Society, and Arthur B. Meyer, editor of the *Journal of Forestry*, have done a conscientious job of patterning this book and selecting contributors who are deeply experienced in their subjects. The material itself has been edited, if not to a high shine, at least to a pleasant patina.

While there is no substitute for single authorship, Clepper and Meyer have pulled the contributors into an effective unity. The relationship between the essays is considerably closer than that of kissing-cousins, which is more than can be said of the authors themselves!

There are twenty chapters, penned by such bell-ringers as V. L. Harper, Stephen H. Spurr, Richard E. McArdle, Kenneth B. Pomeroy, and Tom Gill. The subjects range from a compact general introduction, "Six Decades of Growth," by George A. Garrett, through "The Recreational Use of Forest Land in the United States," by C. Frank Brockman, and "Industrial Forestry," by Paul M. Dunn and Robert S. Hyde, to "America and World Forestry"—which is, of course, the Tom Gill piece.

The reader should jump from Garrett's initial chapter to the concluding essay by Gill. Thus he spans the whole long tortuous, often noble and always persevering development of forestry, so that as he returns to specific chapters concerned with several aspects of the American scene he sees these specifics in terms of both the growth that has taken place, and the world-picture today.

This anthology is unashamedly optimistic in its emphases. Chapter after chapter begins its title with the word "progress." And while no one questions that these six decades represent an enormous progress, there is a tendency in a "house publication" of this sort to focus upon the successes that have been achieved at the expense of the problems that remain. Progress pleases everyone, and it does not usually involve controversy – especially in retrospect. Problems, on the other hand, please very few of us, and there is inevitable controversy concerning the way they are to be handled.

The result is that **American Forestry: Six Decades of Growth** has a pink glow to it, characteristic of high school history books. It is extraordinarily successful in avoiding a head-on collision with the social and political problems that American forestry must resolve in this "seventh decade" which we are now entering. Nowhere does the book come closer to striking sparks than in the ominous last sentence of Garrett's chapter: "The magnitude of the potential withdrawals of land now in timber-production may well threaten the raw material base of the wood-using industry in the not-so-distant future."

But no book can do all things, and it is doubtful if any book could have provided a better foundation upon which the practitioners of forestry could stand, as they attempt to assess this uncertain and challenging future. This is all that could be asked of a publication by a professional association. It remains now for those foresters who are recalcitrant and untamed to continue to write, as a few of them have been doing, individual articles and books

(*Turn to page* 67)

How TD-15 Skid-Grapple loads out 100 mbf daily...with a ONE-MAN CREW!

See how the Little Falls Logging Co. TD-15 Skid-Grapple unloads the rear section of a logging trailer—and positions it fast for recoupling. In addition to the "15," Little Falls also owns a TD-18 Skid-Grapple. "I find both International Skid-Grapples excellent equipment—paying their way by saving two men in each landing," states owner Ed Hampton.

Using the low profile West Coast Special Skid-Grapple and commanding a lift of 18000 lbs., the "15" operator has an easy job of loading the "big ones"! The "15" loads to height of 11'-9", has a forward reach of 5'-9"—to simplify "topping out" high loads.

With a one-man loader "crew," Little Falls Logging Co., Rio Dell, California, loads 100,000 board feet of redwood logs daily—with their International Drott TD-15 Skid-Grapple. And they have reserve capacity to step up their loading rate substantially if they want to!

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An Algebraic Approach to Land Use in the Pacific Northwest

By C. K. STEDMAN

THE population of the United States at the present time is approximately 180 million. If the present growth rate continues, and no one can guarantee that it won't, the population will be twice as great in the incredibly short time of 40 years. This would mean twice as great a demand for forest products if the per capita consumption remained the same; even more if it increased. It would also mean twice as great a demand for outdoor recreational resources if the per capita consumption remained the same as it is now, and even more as automation brings shorter work weeks.

We can only conclude that the abundance of forest products and of outdoor recreational areas which we have enjoyed up to now may not continue much longer, and abundance could soon be replaced by scarcity. Scarcity, in turn, means intensified conflict among competing land uses.

As a means of resolving the conflict much is said these days about "multiple use." The phrase has a reassuring sound, and somehow suggests that we can, after all, have our cake and eat it too; that we can chop down all the trees and still camp in the cool forest. But alas, it isn't so. Within the vast areas of the national forests there are undoubtedly many sparsely-timbered regions where the management of the land will be dictated by concern for grazing or watershed protection, and where the requirements of more than one use can be given more or less equal weight. But we should be honest with ourselves and face the fact that for much of the timber-growing area of the Pacific Northwest, logging must be the *primary* use, with other uses subordinated to it. For example, the practice of planting cut-over areas for rapid reforestation is beneficial for watershed protection. But the purpose of watershed protection is only incidental to the purpose of getting the next crop of trees growing. So far as the watershed itself is concerned, it would be still better protected by leaving the virgin forest uncut. Similarly, fishing and hunting can be enjoyed to the full only in virgin country. But, as second best, there are still many opportunities to enjoy those sports after an area has been logged. The point is that, apart from occasional patches of a few acres set aside for campsites, the time, place, and amount of cutting in areas devoted to timber growths will be dictated almost exclusively by concern for timber. Thus, like so many slogans, the phrase "multiple use" sounds plausible at first but falls apart when it is examined more closely. It is like the multiple use of a small boy's fifty-cent allowance after he has spent 49 cents on a bag of marbles. It is misleading, and can only confuse the issues to speak of "multiple use" in relation to an area for which the *primary* use is logging.

While logging must be the primary use of very large areas of land, it is equally clear that the enjoyment of nature in the wild state must be the primary use of other substantial areas. Improvement of farm technology steadily reduces the fraction of the population engaged in raising foodstuffs and concentrates the population in cities. At the same time improvements in production methods, including automation, steadily reduce the amount of interest and personal fulfillment that city workers derive from their jobs. Nothing can offset this mechanization of our lives except outdoor recreation and contact with nature. The ever-increasing flood of visitors to the national parks, drawn from all the walks of life, testifies to the deep-seated need in all of us to get closer to the earth. City and state parks and the recreational opportunities of timber lands all play their part, but they cannot take the place of virgin forests, streams, and mountains, which can be found only in the national parks and wilderness areas. (We use the term "wilderness" for lack of a better one, but do not mean to imply that the area in question must necessarily be left entirely undeveloped. The question of the optimum type of development for recreational uses is outside the scope of this paper.)

We can only conclude that areas in which logging is the primary use, and areas in which wilderness is the primary use, are both vitally necessary for the welfare of the nation. Both types of land use are "multiple" in the sense that they provide for watershed protection and the preservation of game. But the two primary uses cannot be combined in any sort of multiple use concept because they absolutely exclude each other. It follows that, as rational individuals, we have no choice but to search for some reasonable basis for deciding how much land should be allotted to one and how much to the other.

To see the problem in proper perspective we must realize the fact, emphasized repeatedly by competent foresters, that most of the land potentially usable for raising timber is in the central and eastern parts of the country. The total for the United States is about 750,000 square miles. About 45,000 square miles have already been committed to use as national parks and wilderness areas, of which perhaps two thirds would be suitable for commercial timber land. Since this amounts to only four per cent of the total commercial timber land, it is clear that we have not as yet given much priority to the enjoyment of nature in the wild state! It is difficult to determine exactly how much commercial forest land is still in old growth virgin timber, but excluding Alaska it is probably not more than 60,000 square miles. If so, logging has already claimed 92 per cent of the currently recognized total of commercial forest land, plus the large expanses of one-time forests which are now irrevocably urban and agricultural. So the determination of the best possible uses for these 60,000 square miles of remaining primeval forest is urgent and of vital importance to every citizen.

The problem cannot be solved by attempting to forecast the requirements of the nation for forest prod-

When first confronted by Howard Stagner's "primary use" article some months ago and now by Dr. Stedman's essay, our reaction was somewhat similar to that of Col. Greeley's when he was first informed of the logic in the case for federal forestry regulation. "Maybe it's logical, but is it wise?" he replied. We publish this article well aware that many foresters won't like it and with the offer to give any forester equal magazine space who might wish to present a rebuttal

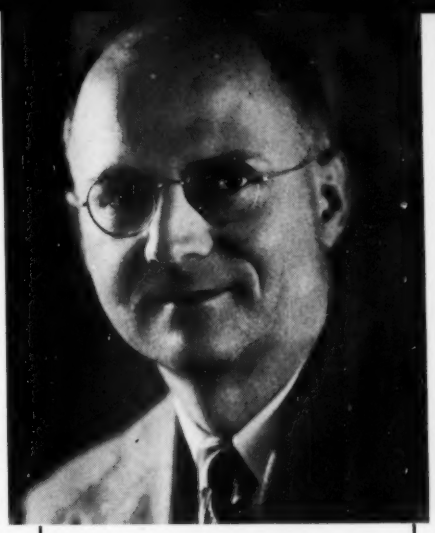
ucts and balancing this against estimated growth per acre to determine the required acreage. This approach is implicit in much that is written on the subject, but it fails for several reasons. First, the estimates cannot possibly be good enough to determine the total requirements within an area of 60,000 square miles, let alone to establish a division of that area. Second, if the predictions showed a substantial deficiency, and the argument were carried to its logical conclusion, we would have to abolish wild areas altogether, including the national parks. Surely that conclusion would be unacceptable even to the strongest proponents of commercial use. Third, and most basic, this approach takes no account of the fact that wilderness is a vitally important use in its own right, and is not something we will have only if there happens to be some land left over after commercial uses are satisfied.

What we need is an approach to the problem which can give specific answers in terms of X square miles for wilderness and Y square miles for logging. This suggests that we should try to weigh the penalties and benefits of the two types of use as applied to a representative area. Think of a 1000-square-mile tract of virgin timber for which the assigned primary use has been logging. What effect would it have upon the lumber supply of the country if the decision were made to withdraw this tract from the market and preserve it in the wild state? If it had not in any event been scheduled for cutting during the coming year, the effect of the withdrawal during that year would obviously be nil. So, to avoid this impasse, we go to the other extreme and suppose that the area in question is the last tract of virgin timber that is available for commercial use. The effect of the withdrawal on the lumber supply is then twofold: 1) the first harvest of old growth timber is sacrificed, and 2) the gross area available to the nation for growing forest products throughout the centuries to come is reduced by one thousand square miles.

The first harvest is a one-time, "single shot" affair, and as such should probably not carry much weight in a discussion of long-term allocation of resources. If we assume the average to be 30 million board feet per square mile and the annual cut of sawtimber to be 46 billion board feet, the hypothetical 1000 square miles would supply the lumber requirements of the country for only eight months. (There would also be another loss of roughly the same magnitude spread over the period of the crop rotation because, on the average, each tract would be eight months older when cut.) When scarcity is upon us, demand and supply must somehow be brought into balance. Since the adjustment will have to be made in any event, we can hardly be so improvident as to set great store upon postponing the reckoning by a few months.

There are various ways we can attempt to set a valuation on the second effect, the permanent loss of timber growing land. Relative to the whole, the 1000 square miles amounts to one in 750, or 0.13 per cent. Another way of stating it is to say that on the basis of a population of 200 million and an annual growth of 250,000 board feet per square mile, the withdrawal would, on the average, reduce by two lineal feet of 2 x 4 the amount of lumber available annually to each individual! We do not mean to imply that every person might want to buy 2 x 4 in a given year, but the number does give a measure of the smallness of the sacrifice paid per capita for the privilege of having 1000 square miles of wilderness available in perpetuity. Still another way of viewing the matter is in terms of jobs. The structures for which the lumber would have been used will not go unbuilt, but they will use a little more of alternative materials such as brick and cement than would otherwise have been the case. There is no reason to suppose that the manufacture of the alternative materials will consume fewer man-hours of labor than the production of the corresponding amount of lumber, so to this extent the effect on jobs is nil. If we take account of new jobs created to serve the tourists visiting the area, the total effect of the change from primary use logging to primary use recreation, would probably be an increase in employment.

The 1000-square-mile tract that we have considered is intended as an illustrative example, an is suggested as a yardstick by which we can measure the economic cost of preserving any specified area for aesthetic and recreational uses. For instance, the areas north of the Stehekin River which were included in the 1939 definitions of the Forest Service but excluded from the recently established Glacier Peak Wilderness Area contain some of the most outstanding alpine scenery in the United States and total only about 600 square miles. Detailed surveys would undoubtedly show forest yields somewhat different from those assumed above but they could not be grossly different. Everyone will not place the same relative weight on economic values and aesthetic values. To the writer it seems inconceivable that we could rob the generations to come of that heritage for economic gains which are as small as we have shown them to be.



Author C. K. Stedman

Dr. Stedman graduated from the University of British Columbia and received his Ph.D. in physics at Purdue University in 1936, and taught there until 1941. From 1941 to 1943 he served as Research Associate at Harvard University where he was engaged in the development of sonar and other anti-submarine equipment. He was Chief of Physical Research at Boeing Airplane Co. in Seattle from 1943 to 1953, and is now a private consultant. His interest in wilderness stems from a lifelong love of the outdoors.

THESE ARE THE CHAMPS

By DOROTHY DIXON

FOR two decades, the duration of Rip Van Winkle's nap, The American Forestry Association has been locating the largest living specimens of the various species of native American trees. The prime purposes of the campaign are to stimulate greater appreciation of trees, to establish a national library of reference material and, through the co-operation of the owners, to protect and preserve these monarchs to the end of their natural lives as cherished landmarks and as sources of seed to perpetuate the great size of their species.

This is the fifth report on the Big Tree Campaign. It contains the vital statistics of the champions crowned since the last publication in 1956. The list now comprises 355 National Champions. Seventy sovereigns have been dethroned by discovery of larger specimens. Thirty-three previously unreported species and varieties have been added. Nominators reported three trees destroyed. These were the Indiana American elder, a Plains poplar (cottonwood) in Wyoming, and the Missouri Palmer linden. These species have not been replaced in the list.

Forty-two states and the District of Columbia are growers of champion trees. Sharing the dubious distinction of fostering no trees of championship size are Iowa, Minnesota, New Hampshire, North Dakota, Rhode Island, West Virginia, and the two new states of Alaska and Hawaii. Perhaps some of their distinctive species have not been thoroughly explored.

The state of California leads with 41 monarchs. Maryland reports 38, Illinois claims 32 of the biggest trees, Michigan 31, Oregon 27, Missouri 24, Tennessee 19, Washington 14, Ohio 11, Pennsylvania and Indiana 10 each.

Approximately 260 nominators enjoy the honor of having their candidates acclaimed national champions of the species. Undisputed discoverer of the most trees is Kendall Laughlin of Chicago, Illinois who has reported 66 champions. The late Fred W. Besley, former State Forester of Maryland, submitted 34 entries. Oliver V. Matthews, Salem, Oregon, has nominated 24 giants of the Pacific Northwest. Paul W. Thompson, Birmingham, Michigan, has 22 leaders to his credit, and Dr. S. Glidden Baldwin of Danville, Illinois, 20.

California's Giant Sequoia (the so-called General Sherman tree) remains the largest of all, with a girth of 101 feet 6 inches (base measurement). The smallest tree to wear the victory crown is a Highbush Blueberry, *Vaccinium corymbosum*. This little champ has a circumference of 3¾ inches at breast height, and is but 13 feet tall.

The tallest tree on record is a redwood in Humboldt County, California, extending skyward to 368 feet 7 inches. This towering specimen was discovered and measured by the forest engineering class of Humboldt State College, Arcata, California, in 1956.

The bristlecone pine has replaced the redwood as the oldest living tree in the world. The oldest bristlecone sampled has been determined to be in excess of 4600 years, while the oldest known redwoods, including the giant General Sherman, have been "clocked" to be about 3500 years old. The bristlecone pine reported here is known as the "Patriarch," and is believed to be about 1500 years old.

The search for big trees continues. While the search is in a sense competitive, it also is co-operative. More and more it becomes a nationwide project rather than a localized vying for honors.

The Maryland Forestry Association and the Maryland State Department of Forests and Parks have conducted a statewide tree contest for many years. More recently the Ohio Forestry Association and the Michigan Botanical Club have been actively engaged in the task of finding and reporting the biggest tree of each species growing in these states. A similar project is about to be launched by the Florida Forestry Association.

If you know of a tree of the same species larger than the one reported here, The American Forestry Association will appreciate having its full and accurate record as to identity of species, circumference 4½ feet above ground, its estimated height and crown spread, its state of preservation, its location and ownership. (Instructions for measuring trees will be sent upon request.) A photograph of the tree also is desired for the record.

Determination of bigness in trees listed is based on the sum of dimensions and of circumference, height and spread. To the total inches of stem circumference (4½ feet above ground) is added the total height in feet plus one-quarter of the crown spread footage. This gives a single figure denoting aggregate growth, with circumference as No. 1 factor, followed by the height and crown spread.

The common and botanical names conform to *Standardized Plant Names*, a book issued by the American Joint Committee on Horticultural Nomenclature. Identification and measurements are by the nominators. This listing of the tree world's "best of class" is constantly subject to additions and revision, since they are likely to be dethroned by a more massive competitor, are subject to the ravages of disease, to the elements or to thoughtless commercialism. The use of the word "champion" therefore is in the strictest sense unofficial.

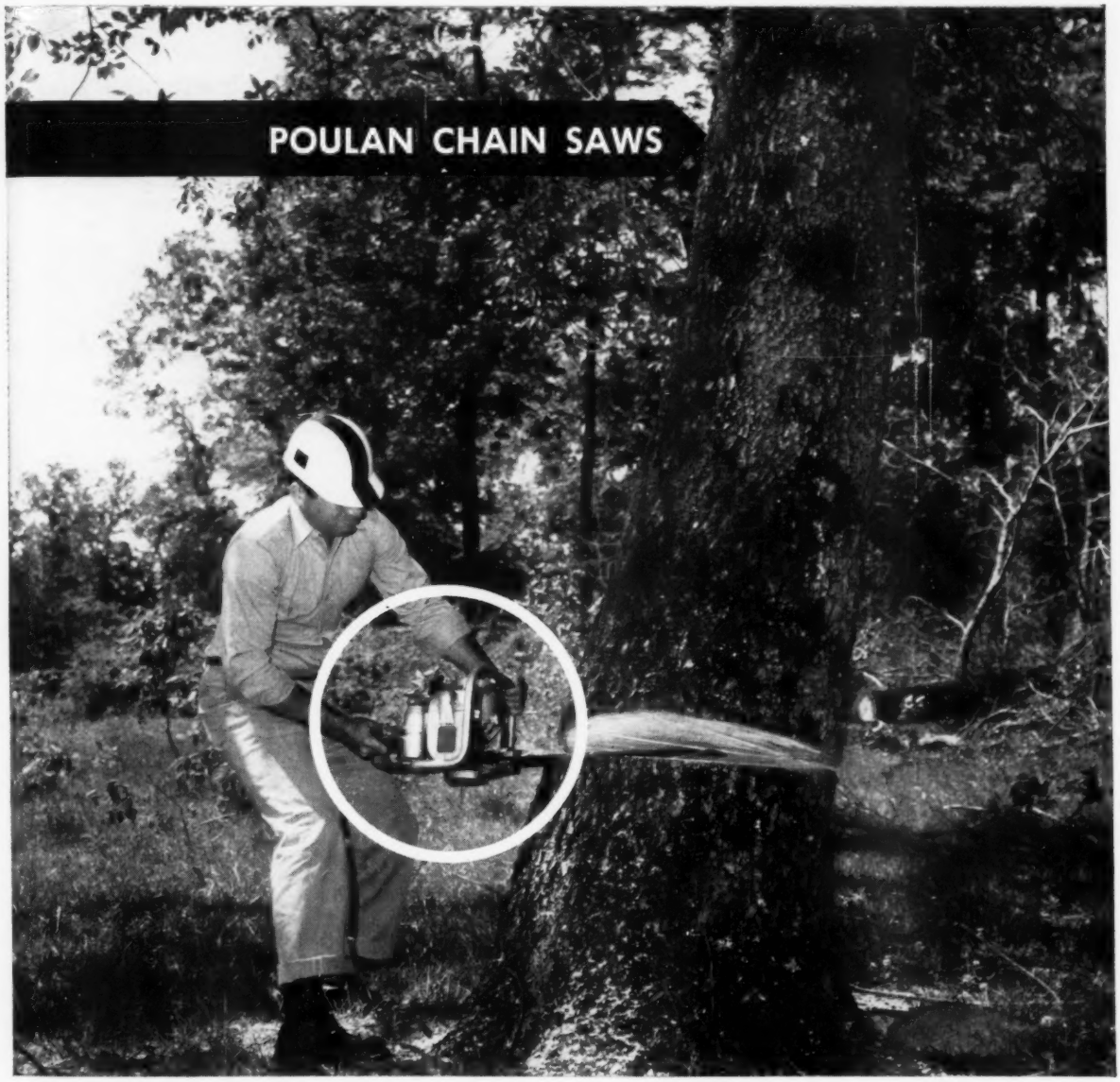
Species	Circumference at 4½ feet	Height	Spread	Location of Tree and Nominator
AILANTHUS				
Tree of Heaven, *Ailanthus altissima*	18'8"	80'	75'	Head of the Harbor, Long Island, New York. George H. Peters, Freeport.
ALDER				
Hazel, *Alnus rugosa*	1'2"	29'	17"	Gulpha Creek, Hot Springs, Arkansas. Kendall Laughlin, Chicago, Illinois.
Red, or Oregon, *Alnus rubra*	11'6½"	89'	67'	Olympic National Park, Washington. Coleman Newman, Port Angeles.
Seaside, *Alnus maritima*	3'5½"	78'	50'	Rock Creek Park, Washington, D. C. Ernest H. Van Fossan, Washington, D. C.
Sierra, or White, *Alnus rhombifolia*	11'3"	93'	45'	Angeles National Forest, California. Will H. Thrall, Alhambra, and Clark Vernon, Downey.
Sitka, *Alnus sinuata*	1'2"	----	----	Saddle Mountain State Park, Clatsop County, Oregon. Oliver V. Matthews, Salem.
Speckled, *Alnus incana*	1'9"	33'	21'	Dunes State Park, Indiana. Kendall Laughlin, Chicago, Illinois.
ARBORVITAE				
Eastern, or Northern White-Cedar *Thuja occidentalis*	17'2"	111'	38'	Leelanau County, South Manitou Island, Michigan. Paul W. Thompson, Birmingham.
Giant, or Western Redcedar, *Thuja plicata*	66'1"	130'	55'	Olympic National Park, Washington. Floyd L. Dickinson, Port Angeles.
ASH				
Black, *Fraxinus nigra*	8'8"	79'	39'	Chippewa County Forest, Wisconsin. M. E. Reinke, Chippewa Falls.
Blue, *Fraxinus quadrangulata*	10'6"	103'	54'	Funk's Grove, Illinois. Kendall Laughlin, Chicago.
Flowering—(see Fringetree)				
Green, *Fraxinus pennsylvanica lanceolata*	14'5"	105'	79'	Big Oak Tree State Park, Missouri. Kendall Laughlin, Chicago, Illinois.
Mountain—(see Mountainash)				
Oregon, *Fraxinus oregona*	18'	----	----	Near Burlington, Oregon. T. J. Starker, Corvallis.
Prickly—(see Pricklyash)				
Pumpkin, *Fraxinus tomentosa*	11'5"	96'	36'	Big Oak Tree State Park, Missouri. Jeffrey R. Short, Jr., Chicago, Illinois.
Red, *Fraxinus pennsylvanica*	10'9"	99'	66'	Swan Pond Park, Riverside, Illinois. Kendall Laughlin, Chicago.
Velvet, *Fraxinus velutina*	5'4"	44'	46'	Twin Falls, Idaho. Harold C. Hallock, Twin Falls.
White, *Fraxinus americana*	22'3"	80'	82'	Glenn Mills, Pennsylvania. S. Glidden Baldwin, Danville, Illinois, and T. V. Palmer, Concord, Pennsylvania.
ASPEN				
Bigtooth, *Populus grandidentata*	9'11"	90'	75'	Rocks, Maryland. F. W. Besley (deceased)
Quaking, *Populus tremuloides*	9'10"	76'	----	Cedar Mountain, Utah. James D. Curtis, Idaho City, Idaho.
BALDCYPRESS				
Common, *Taxodium distichum*	39'8"	122'6"	47'	Middle Fork of Obion River in Weakley County, Tennessee. James M. Thomas, Hazel Kentucky.
BASSWOOD—(see Linden)				
BEECH				
American, *Fagus grandifolia*	15'2"	108	106	Cumberstone, Maryland. F. W. Besley, (deceased)
Carolina, *Fagus grandifolia caroliniana*	12'10"	126'	----	West Feliciana Parish, Louisiana. Lazella Schwarten, Jamaica Plain, Massachusetts.
BIRCH				
Gray, *Betula populifolia*	7'3"	60'	51"	Near Clarksville, Maryland. F. W. Besley (deceased).
Paper, papyrifera	10'11"	96'	93'	Lake Leelanau, Michigan. Howard Harvey, Williamsburg.

Species	Circumference at 4½ feet	Height	Spread	Location of Tree and Nominator
River, *Betula nigra*	12'4"	98'	72'	Near Odenton, Maryland. F. W. Besley, (deceased).
Sweet,	10'10"	60'	60'	Great Smoky Mountains National Park, Tennessee. S. Glidden Baldwin, Danville, Illinois.
Water, *Betula fontinalis*	1'10"	----	----	Wasco County, Oregon. Oliver V. Matthews, Salem.
Yellow, *Betula lutea*	14'1"	90'	64'	Great Smoky Mountains National Park, Tennessee. S. Glidden Baldwin, Danville, Illinois.
BLACKGUM— (see Tupelo)				
BLUEBERRY (see also Farkleberry)				
Highbush blueberry, *Vaccinium corymbosum*	3¾"	13'	4½'	Fish Lake, Oakland County, Michigan. Paul W. Thompson, Birmingham.
Box, *Vaccinium ovatum*	1'½"	21'	13'	Honeyman State Park, Florence, Oregon. F. Leroy Spangler, Medford, Oregon.
BLADDERNUT				
American, *Staphylea trifolia*	10"	18'	15'	White Pines Forest State Park, Illinois. Kendall Laughlin, Chicago.
BOXELDER				
Acer negundo	18'10"	73'4"	40'	Near Spring Brook State Park, Ohio. O. E. Files, Toledo.
BUCKEYE				
California, *Aesculus californica*	12'9"	35'	40'	Shafter Ranch, Olema, California. R. H. Menzies, San Francisco.
Ohio, *Aesculus glabra*	9'11"	90'	33'	Near Dayton, Ohio. Walter W. Smith, Dayton.
Sargent Ohio, *Aesculus glabra sargenti*	4'7"	48'	35'	Elms Hotel, Excelsior Springs, Missouri. Kendall Laughlin, Chicago, Illinois.
Yellow, *Aesculus octandra*	15'11"	85'	54'	Great Smoky Mountains National Park, Tennessee. S. Glidden Baldwin, Danville, Illinois.
BUCKTHORN				
Carolina, *Rhamnus caroliniana*	9"	----	----	Gatlinburg, Tennessee. S. Glidden Baldwin, Danville, Illinois.
Cascara, *Rhamnus purshiana*	9'5"	60'	----	Near Rockport, Washington. T. J. Starker, Corvallis, Oregon.
Common, *Rhamnus cathartica*	4'6"	32'	31'	State College, Pennsylvania. H. H. Arnold, State College.
Glossy, *Rhamnus frangula*	11"	21'	16'	Chechupinqua Woods, Chicago, Illinois. Kendall Laughlin, Chicago.
BUFFALOBERRY				
Silver, *Shepherdia argentea*	2'7"	18'	18'	Mahheur County, Oregon. Oliver V. Matthews, Salem.
BUMELIA				
Buckthorn, *Bumelia lycioides*	3'5½"	40'	30'	Vulcan, Iron County, Missouri. George O. White, Jefferson City.
Woolybucket, or Gum, *Bumelia lanuginosa*	5'3"	55'	30'	Salyer Lake, near Binger, Oklahoma. Floyd Clay, Alfalfa.
BURNINGBUSH— (see Wahoo)				
BUTTERNUT: WHITE WALNUT				
Jugans cinerea	12'6"	82'	56'	Newark, Maryland. F. W. Besley, (deceased).
BUTTONBUSH				
Common, *Cephalanthus occidentalis*	2'1"	15'	18'	Near Lisle, Illinois. Kendall Laughlin, Chicago.
CALIFORNIA LAUREL				
Umbellularia californica	36'9"	----	----	Near Eleanor, Humboldt County, California. T. J. Starker, Corvallis, Oregon.
CATALPA				
Northern, *Catalpa speciosa*	19'4"	45'	70'	Near Ellicott City, Maryland. F. W. Besley (deceased).
Southern, *Catalpa bignonioides*	15'4"	54'	58'	Sparta, Kent County, Michigan. Miss Carol Kurtz, Sparta.

Species	Circumference at 4½ feet	Height	Spread	Location of Tree and Nominator
CEDAR— (see Arborvitae, Incensecedar, Falsecypress, Redcedar)				
CHERRY				
Bitter, *Prunus emarginata*	7′6″	50′	25′	Toledo, Lincoln County, Oregon. Oliver V. Matthews, Salem.
Black, *Prunus serotina*	23′4″	102′	89′	Lawrence, Van Buren County, Michigan. Paul W. Thompson, Birmingham.
Choke— (see Chokecherry)				
Laurel— (see Laurelcherry)				
Pin, *Prunus pensylvanica*	4′7″	70′	20′	Great Smoky Mountains National Park, Tennessee. S. Glidden Baldwin, Danville, Illinois.
CHESTNUT				
American, *Castanea dentata*	15′3½″	72′	67′	Near Chelsea, Michigan. P. W. Thompson, Birmingham.
CHINABERRY				
Melia azedarach	10′6″	51′	53′	Near Orangeburg, Orangeburg County, South Carolina. C. W. Hall, Columbia.
CHINKAPIN				
Evergreen— (see Evergreenchinkapin)				
Ozark, *Castanea ozarkensis*	10′4″	52′	75′	Near Fayetteville, Washington County, Arkansas. Harold A. Howell, Little Rock.
CHOKEBERRY				
Black, *Aronia melanocarpa*	4″½	18′	5′	Fish Lake, Oakland County, Michigan. Paul W. Thompson, Birmingham.
CHOKECHERRY				
Common, *Prunus virginiana*	3′	34′	28′	Madison, Wisconsin. W. E. Scott, Madison.
Western Common, *Prunus virginiana demissa*	2′10″	----	---′	Near Yamhill, Yamhill County, Oregon. Oliver V. Matthews, Salem.
COFFEETREE				
Kentucky, *Gmynocladus dioicus*	12′4″	90′	70′	Canal, Winchester, Ohio. Mrs. Homer H. Barnhart, Canal.
COTTONWOOD— (see Poplar)				
CRABAPPLE				
Lanceleaf, *Malus lancifolia*	1′10″	25′	23′	Blue Valley Park, Kansas City, Missouri. Kendall Laughlin, Chicago, Illinois.
Oregon, or Western, *Malus fusca*	5′4″	----	----	On the Nehalem River, Clatsop County, Oregon. Oliver V. Matthews, Salem.
Prairie, *Malus ioensis*	4′6″	27′	32′	Morton Arboretum, Lisle, Illinois. Kendall Laughlin, Chicago.
Wild Sweet, *Malus coronaria*	1′10″	28′	16′	New Germany, Maryland. F. W. Besley, (deceased).
CRAPEMYRTLE				
Common, *Lagerstroemia indica*	9′8″ (at 3′)	58′	5′	Middleburg Plantation, Huger, South Carolina. Edward von S. Dingle, Huger.
CYPRESS				
Arizona, *Cupressus arizonica*	17′5″	102′	38′	Coronado National Forest, near Tucson, Arizona. James L. Mielke, Albuquerque, New Mexico.
False— (see Falsecypress)				
Modoc, *Cupressus bakeri*	10′2″	110′	----	Near Miller Lake, Oregon. Oliver V. Matthews, Salem.
Monterey, *Cupressus macrocarpa*	11′	105′	----	Belmont, San Mateo County, California. Woodbridge Metcalf, Berkeley.
DEVILS-WALKINGSTICK				
Aralia spinosa	2′1″	30′	12′	Great Smoky Mountains National Park, Tennessee. S. Glidden Baldwin, Danville, Illinois.
DOGWOOD				
Flowering, *Cornus florida*	5′4″	42′	42′	Near Oriole, Somerset County, Maryland. F. W. Besley (deceased).
Pacific, or Western, *Cornus nuttalli*	6′11″	100′	45′	Milwaukie, Clackamas County, Oregon. Oliver V. Matthews, Salem.
Pagoda, *Cornus alternifolia*	1′9″	27′	14′	Rupert, Vermont. William H. Meyer, West Rupert.

Species	Circumference at 4½ feet	Height	Spread	Location of Tree and Nominator
Roughleaf, *Cornus asperifolia*	1'2"	24'	18'	Mt. Washington Cemetery, Jackson County, Missouri. Kendall Laughlin, Chicago, Illinois.
Roundleaf, *Cornus rugosa*	6½"	14'	6½'	Lake Michigan, Leelanau Co., Michigan. P. W. Thompson, Birmingham.
DOUGLASFIR				
Bigcone, *Pseudotsuba macrocarpa*	23'	173'	100'	Angeles National Forest, California. W. I. Hutchinson, San Francisco.
Common, *Pseudotsuga taxifolia*	53'4"	221'	61'	Olympic National Park, Washington. Preston P. Macy, Longmire.
ELDER				
Blackbead, *Sambucus melanocarpa*	2'2"	30'	....	Near Prescott, Columbia County, Oregon. Oliver V. Matthews, Salem.
Blueberry, *Sambucus cerulea*	8'5"	....	....	Near San Rafael, Marin County, California. Philip C. Knapp, San Francisco.
Pacific Red, *Sambucus callicarpa*	2'5"	....	....	Shoalwater Bay, Pacific County, Washington. Oliver V. Matthews, Salem, Ore.
Scarlet, *Sambucus pubens*	6"	14½'	5½'	Near Beulah, Benzie County, Michigan. Paul W. Thompson, Birmingham.
ELM				
American, or White, *Ulmus americana*	24'7"	160'	147'	Near Trigonia, Blount County, Tennessee. Edgar Calhoun, Kingsport.
Rock, *Ulmus thomasi*	10'7½"	90'	....	Swope Park, Kansas City, Missouri. A. E. Shirling, Kansas City.
September, *Ulmus serotina*	6'2"	58'	46'	Glenwood, Arkansas. Kendall Laughlin, Chicago, Illinois.
Slippery, *Ulmus fulva*	18'3"	85'	70'	Near Henderson, Kentucky. Henry T. Converse, Jr., Corydon.
EUONYMUS— (see Wahoo)				
EVERGREENCHINKAPIN				
Giant, *Castanopsis chrysophylla*	15'3"	127'	....	Near Annapolis, Sonoma County, California. Arnold F. Wallen, Oakland.
FALSECYPRESS				
Lawson, or Port Orford Whitecedar, *Chamaecyparis lawsoniana*	27'2"	200'	....	Squaw Creek, Coos County, Oregon. Oliver V. Matthews, Salem.
Nootka, or Alaska Yellowcedar, *Chamaecyparis nootkatensis*	21'	175'	27'5"	Olympic National Park, Washington. Robert L. Wood, Poulsbo.
Whitecedar, or Atlantic Whitecedar, *Chamaecyparis thyoides*	10'5"	60'	25'	Near Milford, Delaware. W. S. Taber, Dover.
FARKLEBERRY				
Vaccinum arboreum	1'6"	15'	13'	Burnham Mountain, Glenwood, Arkansas. Kendall Laughlin, Chicago, Illinois.
FIG				
Florida Strangler, *Ficus aurea*	19'6"	72'	70'	Matheson Hammock, Florida. Elbert A. Schory, Fort Myers, and Roy Woodbury, Coral Gables.
Moretonbay, *Ficus macrophylla*	29'6"	65'	140'	Santa Barbara, California. Will H. Thrall, Alhambra.
FIR				
Alpine, *Abies lasiocarpa*	9'	125'	15'	Willamette National Forest, Oregon. Oliver V. Matthews, Salem.
Balsam, *Abies balsamea*	9'5"	70'	45'	Colesville, Maryland. F. W. Besley (deceased).
Fraser Balsam, *Abies fraseri*	6'7"	....	....	Great Smoky Mountains National Park, Tennessee. S. Glidden Baldwin, Danville, Illinois.
Cascades, or Pacific Silver, *Abies amabilis*	26'3"	245'	54'	Olympic National Park, Washington. John A. Nattinger, Port Angeles.
Corkbark, *Abies lasiocarpa* var *arizonica*	9'8"	115'	36½'	Fort Apache Indian Reservation, Arizona. White Mountain Apache Tribe.
Douglas— (see Douglasfir)				
Grand, *Abies grandis*	22'4"	175'	40'	Mt. Rainier National Park, Washington. Robert L. Wood, Poulsbo.

Species	Circumference at 4½ feet	Height	Spread	Location of Tree and Nominator
Noble, *Abies procera*	22'8"	260'	35'	Columbia National Forest, Washington. Thornton T. Munger, Portland, Oregon.
Red, or California Red, *Abies magnifica*	26'3"	177'	—	Calaveras County, California. William Orvis and A. A. McCready, Sonora.
Shasta Red, *Abies magnifica shastensis*	19'6"	174'	—	Lassen National Forest, California. T. J. Starker, Corvallis, Oregon.
White, *Abies concolor*	25'5"	189'	—	Yosemite National Park, California. John B. Wosky, Yosemite National Park.
FORESTIERA				
Texas, or Swamp-Privet, *Forestiera acuminata*	2'1"	28'	31'	Big Oak Tree State Park, Missouri. Kendall Laughlin, Chicago, Illinois.
FRINGETREE				
White, or Flowering Ash, *Chionanthus virginicus*	4'8"	60'	62'	National Zoological Park, Washington, D. C. C. Ernest H. Van Fossan, Washington, D. C.
GUM—(see Sweetgum and Tupelo)				
HACKBERRY				
Common, *Celtis occidentalis*	16'8"	75'	66'	Granville, Ohio. T. H. Price and Thomas C. Beer, Bucyrus.
Dog, *Celtis occidentalis canina*	17'8"	102'	79'	New Harmony, Indiana. Eugene Cypert, Jr., Paris, Tennessee.
Douglas, or Western, *Celtis douglasi*	4'4"	—	—	Portland, Oregon. Oliver V. Matthews, Salem.
Sugar, *Celtis laevigata*	15'3"	60'	90'	Florence, Alabama. Robert A. Campbell, Norris, Tennessee.
HAWTHORN				
Albany, *Crataegus punctata canescens*	3'11"	21'	37'	Shabbona Woods, Cook County, Illinois. Kendall Laughlin, Chicago.
Cockspur, *Crataegus crusgalli*	2'9"	44'	45'	Bloomfield Hills, Oakland County, Michigan. Paul W. Thompson, Birmingham.
Crataegus acanthacolonensis	2'7"	21'	21'	Morton Arboretum, Lisle, Illinois. Kendall Laughlin, Chicago.
Crataegus apiomorpha	1'6"	23'	15'	Morton Arboretum, Lisle, Illinois. Kendall Laughlin, Chicago.
Crataegus blothra	2'10"	47'	32'	Harms Woods, Cook County, Illinois. Kendall Laughlin, Chicago.
Crataegus depilis	3'	30'	22'	Miami Woods East, Morton Grove, Illinois. Kendall Laughlin, Chicago.
Crataegus disperma	2'7"	23'	23'	Schiller Woods, Chicago, Illinois. Kendall Laughlin, Chicago.
Crataegus gemmosa	1'1"	23'	22'	Chechupinqua Woods, Chicago, Illinois. Kendall Laughlin, Chicago.
Crataegus leucantha	1'3"	23'	15'	Glenview Memorial Woods, Cook County, Illinois. Kendall Laughlin, Chicago.
Crataegus magniflora	1'3"	26'	23'	Thatcher Woods, River Forest, Illinois. Kendall Laughlin, Chicago.
Crataegus mortonis	4'5"	30'	37'	Morton Arboretum, Lisle, Illinois. Kendall Laughlin, Chicago.
Crataegus paucispina	1'10"	23'	16'	Morton Arboretum, Lisle, Illinois. Kendall Laughlin, Chicago.
Crataegus pentandra	1'11"	23'	16'	Schiller Woods, Chicago, Illinois. Kendall Laughlin, Chicago.
Dotted, *Crataegus punctata*	4'2"	39'	52'	Bloomfield Hills, Oakland County, Michigan. Paul W. Thompson, Birmingham.
Yellow Dotted, *Crataegus punctata aurea*	5'1"	32'	43'	Billy Caldwells Reserve, Chicago, Illinois. Kendall Laughlin, Chicago.
Douglas, or Black, *Crataegus douglasi*	4'11½"	30'	25'	Near Macleay, Marion County, Oregon. Oliver V. Matthews, Salem.
Downy, *Crataegus mollis*	7'8"	30'	50'	Camp Ground Road Woods, Cook County, Illinois. Kendall Laughlin, Chicago.
Hills, *Crataegus hilli*	4'	36'	40'	Thatcher Woods, River Forest, Illinois. Kendall Laughlin, Chicago.
Ontario, or Scarlet, *Crataegus pedicellata*	2'6"	27'	27'	Glenview Memorial Woods, Cook County, Illinois. Kendall Laughlin, Chicago.



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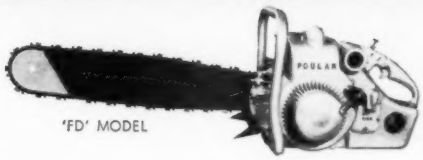

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Species	Circumference at 4½ feet	Height	Spread	Location of Tree and Nominator
Pear, *Crataegus calpodendron*	2'6"	22'	30'	Grantsville, Maryland. F. W. Besley (deceased).
Robeson, *Crataegus robesoniana*	2'10"	34'	27'	Harms Woods, Cook County Illinois. Kendall Laughlin, Chicago.
Thicket, *Crataegus intricata*	5'1"	43'	47'	State Forest, Oakland, Maryland. F. W. Besley (deceased).
Washington, *Crataegus phaenopyrum*	2'9"	25'	23'	Near Burnt Mill, Montgomery County Maryland. F. W. Besley (deceased).
HEMLOCK				
Canada, or Eastern, *Tsuga canadensis*	19'9"	98'	69'	Great Smoky Mountains National Park, Tennessee. S. Glidden Baldwin, Danville, Illinois.
Carolina, *Tsuga caroliniana*	9'4"	---	---	Dunn's Rock, North Carolina. Graham M. Watts, Athens, Georgia.
Mountain, *Tsuga mertensiana*	21'9"	118'	83'7"	Alpine County, California. Allen F. Miller, Sonora.
Pacific, or Western, *Tsuga heterophylla*	27'2"	125'	47'6"	Olympic National Park, Washington. Preston P. Macy, Longmire.
HERCLUESCLUB (See Devils-Walking-stick, Pricklyash)				
HICKORY				
Arkansas Black, *Carya texana arkansana*	6'7"	75'	50'	Dardanelle, Arkansas. Kendall Laughlin, Chicago, Illinois.
Bitternut, *Carya cordiformis*	12'6"	171'	---	West Feliciana Parish, Louisiana. Lazella Schwarten, Jamaica Plain, Massachusetts.
Broadleaf Bitternut, *Carya cordiformis latifolia*	9'5"	90'	71'	Dexter, Missouri. Kendall Laughlin, Chicago, Illinois.
Hammock, or Florida Pignut, *carya ashei*	11'4"	85'	102'	Winter Park, Florida. William P. Wharton, Groton, Massachusetts.
Mockernut, *Carya tomentosa*	9'2"	112'	58'	Sandy Spring, Montgomery County, Maryland. F. W. Besley (deceased).
Pignut, *Carya glabra*	9'6"	156'	52'	Turkey Run State Park, Turkey Run, Indiana. Jeffrey R. Short, Chicago, Illinois.
Red, *Carya ovalis*	13'4"	145'	45'	Norris Reservoir, Tennessee. Keith D. Lange, Norris.
Shagbark, *Carya ovata*	10'4"	101'	62'	Near Easton, Maryland. F. W. Besley (deceased).
Littlenut Shagbark, *Carya ovata nuttalli*	5'8"	55'	30'	Near Burtonsville, Maryland. F. W. Besley (deceased).
Shellbark, *Carya laciniosa*	12'9"	122'	70'	Big Oak Tree State Park, Missouri. Kendall Laughlin, Chicago, Illinois.
Water, *Carya aquatica*	10'7"	120'	68'	Near Camden, South Carolina. Henry Savage, Jr., Camden.
HOLLY—(see also Possumhaw, Winterberry Yaupon)				
American, *Ilex opaca*	13'4"	53'	61'	Near Hardin, Liberty County, Texas. A. L. Rives, Liberty.
HONEYLOCUST				
Common, *Gleditsia triacanthos*	18'9"	92'	112'	Near Queenstown, Maryland. F. W. Besley (deceased).
Thornless Common, *Gleditsia triacanthos inermis*	11'2"	118'	36'	Big Oak Tree State Park, Missouri. Kendall Laughlin, Chicago.
Waterlocust, *Gleditsia aquatica*	4'7"	88'	32'	Big Oak Tree State Park, Missouri. Kendall Laughlin, Chicago.
HOPHORNBEAM				
American, *Ostrya virginiana*	9'6"	70'	57'	Near Winthrop, Maine. J. R. Hansbrough, Upper Darby, Pennsylvania.
HOPTREE				
Common, *Ptelea trifoliata*	1'1"	27'	19'	Whistler Woods, Forest Preserve District, Riverdale, Illinois. Kendall Laughlin, Chicago.
HORNBEAM				
American, or Blue Beach, *Carpinus caroliniana*	5'7"	48'	52'	Near Princess Anne, Maryland. F. W. Besley (deceased).

Species	Circumference at 4½ feet	Height	Spread	Location of Tree and Nominator
INCENSECEDAR				
California, *Libocedrus decurrens*	36′	....	....	Rogue River National Forest, California. Oliver V. Matthews, Salem, Oregon, and Wallace Robinson, Medford, Oregon.
JUNGLEPLUM				
Sideroxylon foetidissimum	8′9″	56′	30′	Matheson Hammock, Florida. Elbert A. Schory, Sr., Ft. Myers, and Roy Woodbury, Coral Gables.
JUNIPER				
Alligator, *Juniperus pachyphloea*	19′11″	71′	70′	Coronado National Forest, New Mexico. Rex King, Albuquerque.
Common, *Juniperus communis*	1′	16′	4′	Dunes State Park, Indiana. Kendall Laughlin, Chicago, Illinois.
Rocky Mountain, or Utah, *Juniperus scopulorum*	26′8″	45′	—	Cache National Forest, Utah. R. P. McLaughlin, Logan.
Sierra, *Juniperus occidentalis*	42′9″	87′	51′	Stanislaus National Forest, California. J. R. Hall, Sonora.
KALMIA				
Mountainlaurel, *Kalmia latifolia*	3′6″	25′	45′	Great Smoky Mountains National Park, Tennessee. Arthur Stupka, Great Smoky Mountains National Park.
LARCH				
Eastern, or Tamarack, *Larix laricina*	11′5″	60′	60′	Chaplin, Connecticut. A. E. Moss and Floyd M. Callward, Storrs.
Western, *Larix occidentalis*	24′	120′	36′8″	Near Kootenai National Forest, Montana. Elers Koch, Missoula.
LAUREL— (see Californialaurel, Kalmia)				
LAURELCHERRY				
Carolina, *Prunus caroliniana*	9′10″	55′	48′	Near Eutawville, South Carolina. F. K. Bull, Pinopolis.
LINDEN: BASSWOOD				
American, *Tilia americana*	16′11″	113′	67′	Grand Traverse County, Michigan. A. J. Hodge, Traverse City.
Beetree, or White, *Tilia heterophylla*	13′9″	80′	61′	Near Little Switzerland, North Carolina. W. L. Beasley, Carthage.
Florida, *Tilia floridana*	10′	111′	54′	Whittington Park, Hot Springs, Arkansas. Kendall Laughlin, Chicago, Illinois.
Littleleaf, *Tilia cordata*	9′1″	45′	57′	Laurel, Maryland. F. W. Besley (deceased).
LOCUST				
Black, *Robinia pseudoacacia*	15′11″	85′	60′	Near Jefferson, Indiana. N. A. Miller, Frankfort.
Honey— (see Honeylocust)				
LYSILOMA				
Bahama, or Wild Tamarind, *Lysiloma bahamensis*	7′6″	48′	50′	Key Largo, Florida. Elbert A. Schory, Sr., Ft. Myers, and Roy Woodbury, Coral Gables.
MADRONE				
Pacific, *arbutus menziesi*	30′9″	80′	126′	Humboldt County, California. R. H. Menzies, San Francisco.
MAGNOLIA				
Bigleaf, *Magnolia macrophylla*	6′7″	59′	64′	Baltimore, Maryland. F. W. Besley (deceased).
Cucumbertree, *Magnolia acuminata*	18′4″	125′	60′	Great Smoky Mountains National Park, Tennessee. S. Glidden Baldwin, Danville, Illinois.
Fraser, or Mountain, *Magnolia fraseri*	7′7″	65′	54′	Great Smoky Mountains National Park, Tennessee. S. Glidden Baldwin, Danville, Illinois.
Southern, *Magnolia grandiflora*	17′8″	114′	....	Wayne County, Chickasawhay Dist., Mississippi National Forest, Mississippi. D. A. Pomerening, Jackson.
Sweetbay, *Magnolia virginiana*	6′	67′	....	Near Camden, South Carolina. Henry Savage, Jr., Camden.
Umbrella, *Magnolia tripetala*	4′9″	40′	25′	Elmont, New York. George H. Peters, Freeport.

Species	Circumference at 4½ feet	Height	Spread	Location of Tree and Nominator
MAHOGANY				
Mountain—(see Mountainmahogany)				
West Indies, *Swietenia mahagoni*	12'6"	70'	75'	Everglades National Park, Florida. Taylor R. Alexander, Coral Gables.
MANZANITA				
Whiteleaf, *Arctosaphylos viscida*	7'4"	21'	24	Lassen National Forest, California. Clyde W. Lewis, Stirling City.
MAPLE				
Bigleaf, *Acer macrophyllum*	28'	—	66'	Near Haydens Bridge, Lane County, Oreg. Oliver V. Matthews, Salem.
Black, *Acer nigrum*	14'2"	94'	73'	Northville, Oakland County, Michigan. Paul W. Thompson, Birmingham.
Chalk, or Whitebark, *Acer leucoderme*	1'7"	29'	19'	Ouachita National Forest, Arkansas. Kendall Laughlin, Chicago, Illinois.
Douglas Rocky Mountain, *Acer glabrum douglasi*	5'6"	50'	20'	Birch Bay, Washington. Oliver V. Matthews, Salem, Oregon.
Mountain, *Acer spicatum*	3'	25'	10'	Great Smoky Mountains National Park, Tennessee. S. Glidden Baldwin, Danville, Illinois.
Red, *Acer rubrum*	20'8½"	60'	50'	Bard College, Annandale, New York. Fred W. Oettinger, Poughkeepsie.
Drummond Red, *Acer rubrum drummondi*	6'5"	52'	46'	St. Francis River, Dunklin County, Missouri. Kendall Laughlin, Chicago, Ill.
Trident Red, *Acer rubrum trilobum*	9'7"	101'	35'	Warren Woods, Three Oaks, Michigan. Kendall Laughlin, Chicago, Illinois.
Silver, *Acer saccarinum*	22'10"	110'	93'	Felicity, Ohio. Karl Maslowski and Woodrow Goodpasture, Cincinnati.
Striped, *Acer pensylvanicum*	3'10"	37'6"	25'	Near Princeton, Massachusetts. Jeffrey R. Short, Jr., Chicago, Illinois..
Sugar, *Acer saccharum*	19'9"	116'	75'	Garrett County, Maryland. F. W. Besley (deceased).
Vine, *Acer circinatum*	3'8"	30'	54'	Wilhoit Mineral Springs, Marion County, Oregon. Oliver V. Matthews, Salem.
MESQUITE				
Common, *Prosopis chilensis*	4'8"	22'	42'	Near Fort Sill, Oklahoma. Floyd Clay, Carnegie.
Honey, *Prosopis glandulosa*	10'10"	60'	65'	Near Gatesville, Texas. Weldon D. Woodson, Los Angeles, California.
Velvet, *Prosopis velutina*	15'	55'	76'	Coronado National Forest, Arizona. Gilbert Sykes, Tucson.
MOUNTAINASH				
American, *Sorbus americana*	5'6"	—	—	Great Smoky Mountains National Park, Tennessee. S. Glidden Baldwin, Danville, Illinois.
MOUNTAINHOLLY				
Nemopanthus mucronata	9½"	14'	8'	Fish Lake, Oakland County, Michigan. Paul W. Thompson, Birmingham.
MOUNTAINLAUREL—(see Kalmia)				
Birchleaf, *Cercocarpus betuloides*	3'1" (at 3')	26'	25'	Prescott Park, near Medford, Oregon. F. LeRoy Spangler, Medford.
Curlleaf, *Cercocarpus ledifolius*	10'7"	24'	67'	Nevada National Forest, near Baker, Nevada. S. D. Warner, Baker.
MULBERRY				
Black, *Morus nigra*	15'1"	65'	70'	Near Easton, Maryland. F. W. Besley (deceased).
Red, *Morus rubra*	14'10"	38'	73'	Near Spokane, Missouri. W. A. Kingman, Springfield.
White, *Morus rubra*	16'2"	68'	80'	Perryville, Cecil County, Maryland. F. W. Besley (deceased).
—MYRTLE				
Oregon—(see Californialaurel)				
Wax—(see Waxmyrtle)				

(To be continued)

Forest Forum

(*From page 2*)

Likes Ding's Idea

EDITOR:

Mr. Darling's letter in the November issue regarding a conservation digest has considerable merit. The proliferation of fact and opinion in all branches of human knowledge at the present time threatens to engulf us in a sea of paper. To my mind, a descriptive and annotated bibliography of recent works in the conservation field would permit your readers a view of the forest as well as the trees.

There is in fact a current project for documenting past conservation literature. The Forest History Society, with grants from the Weyerhaeuser Foundation and the Hill Foundation, is compiling a bibliography of North American forest history which will embrace the period from the discovery of the continent to the present day. When completed it will provide those interested in forestry and conservation with a useful guide to the voluminous body of published material now scattered throughout a multitude of books, specialized bibliographies, and indexes.

Joseph A. Miller
Bibliographer
Forest History Society, Inc.
2706 West Seventh Boulevard
Saint Paul 16, Minnesota

EDITOR:

I thought that "Ding" Darling's proposal for a "Conservation Digest" in the November issue of AMERICAN FORESTS was excellent. At present, it is impossible for the individual to keep up with the tremendous amount of literature in this broad field. Likewise, a great deal of co-ordination and exchange of information is needed among the many agencies and groups, public and private, that are engaged in conservation work. Such a "digest" would be a big step toward solving these problems.

Count me in as a subscriber!

Winslow M. Shaughnessy
Naturalist
Ida Cason Callaway Gardens
Pine Mountain, Georgia

A Fund For a Forester

(*From page 3*)

supplement the section's annual appropriation with increment from the fund.

Other activities of the committee include arranging for co-operation with the school districts and schools of the Greater Washington Area, Washington, D. C., and surrounding counties of Maryland and Virginia in furthering sound conservation and career guidance programs for secondary school students.

Chairman of the committee is Kenneth B. Pomeroy, chief forester, The American Forestry Association.

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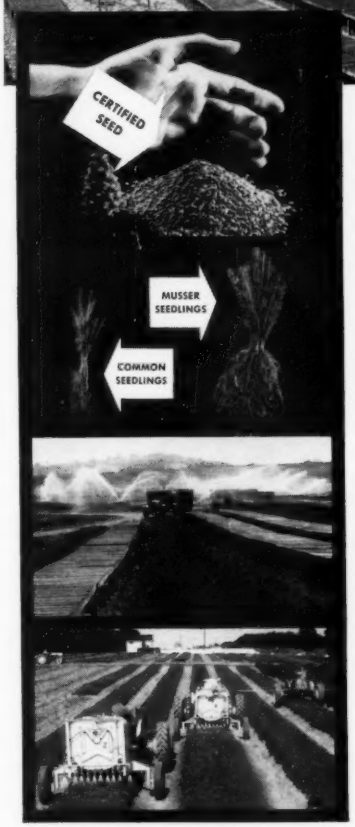

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THE AMERICAN FORESTRY ASSOCIATION, 919 17th Street N.W., Washington 6, D. C.

Your Investments in Land and Water

(*From page* 10)

uses funds derived from taxes collected over the entire nation. The project is located in a specific spot, and its major benefits are local or regional in nature. One group of persons advances the funds, another gets the major benefits. To the extent that costs are fully repaid, the advantage is a temporary one. But many water projects, particularly, are not repaid at all or only in small part. In a lesser degree similar situations arise in land management, particularly in the setting of prices for timber, grazing, and other products of federal lands. A major redistribution of income results—a redistribution between regions and between individuals.

There is nothing inherently wrong about such income redistribution; in fact, many public programs are undertaken for this very purpose. But it does stimulate political pressures which make rational decisions difficult. Each local area seeks to have federal funds spent there. Even if total benefits to the nation are less than total costs, benefits to the local area may be greater than costs to it. This provides a strong incentive for exaggeration, for "log rolling" and "pork barrelling." Few political figures can resist such pressures from their home communities. This situation has been intensified because the Congress has retained decision-making for specific projects.

New Skills Needed

With new problems, new pressures, and less room for correcting mistakes, increased precision and skill will be called for in charting the course of federal investment in land and water resources from the 1960's onward.

As far as possible in the free play of a federal democracy, the machinery for making investment decisions must be well adapted to performing these tasks:

1. Taking full account of the long-range economic and social prospects, to determine what is needed most in the way of land and water programs, and whether the probable benefits of such programs would outweigh those of other kinds of investment.
2. Considering the practicable

G. B. MacDONALD FORMER IOWA FORESTRY HEAD

DR. Gilmour Beyers MacDonald, head of the Department of Forestry at Iowa State College, Ames, Iowa, from 1910 until 1948, ranks with Pammel, Shimek, and McBride as a pioneer leader in Iowa conservation affairs, and unquestionably was one of the outstanding American foresters. A Fellow in the Society of American Foresters and the 1955 recipient of an AFA Distinguished Service Award, Dr. MacDonald built his forestry department on a solid foundation, and upon his retirement served as a member of the Forest Advisory Council of the Department of Agriculture.

As Dr. J. A. Larsen noted in a recent review of Dr. MacDonald's career, his life presents an inspiration to foresters and prospective foresters as an example of how to live a well-rounded life. The son of a Scottish Presbyterian minister, Dr. MacDonald's contributions did not stop with his chosen profession. He served as a life-time elder in the Collegiate Presbyterian Church, was a Rotarian for 30 years, actively supported the Boy Scout movement for 45 years, served 20 years on the Ames, Iowa, City Council, and for 50 years maintained close contact with the College Y.M.C.A.

As Dr. Larsen notes, "In all these activities Prof. MacDonald showed the sterling worth of his Scottish heredity and ancestry. There was an orthodoxy, a straight forward, firm stance with no shifting when he knew he was right. In all these interests he expressed himself generously with his time, financial support, and with his extraordinary capacity to get things done."

People generally do not think of Iowa as a forest state, but Dr. MacDonald built his department to eight full-time members with a student body of 250. Drawn by his warm and solid personality, members of this student body were recruited from both the East and West Coasts, and some of his former students have attained national prominence not only as foresters but as individuals imbued with humanitarian precepts largely taught to them by Dr. MacDonald.

In campaigning for wise husbandry of Iowa's resources, Dr. MacDonald gave strong support to the organization of the Iowa Conservation Commission and the state park movement. He served as Deputy State Forester from 1912-1933 and State Forester from 1933-1955. It fell naturally to him with his ability and knowledge of the state resources to organize and direct the state Civilian Conservation Corps program from 1934 until 1938. He also planned and developed the State Forest Nursery at Ames.

For a number of years, Dr. MacDonald was a member of the State Planning Board and made notable contributions to the Iowa Twenty-Year Plan. He was for several years a member of the Executive Council of the Society of American Foresters, and from 1954-1958 served the Forest Service on the access roads locations project in western states.

Dr. MacDonald died last month.

alternatives of accomplishing a desired end, so that the final decision can be based on all significant evidence.

3. Comparing national benefits and costs of a proposed program to its regional benefits and costs. (In our federal system this need not imply that only those prospects should be selected for which national benefits exceed national costs.)

Let us take a look at the present machinery for reaching investment decisions to see if it meets these minimum specifications.

A federal resource investment program or project goes through several distinct "life stages": within a federal agency, by a review at various points, and in Congress. Let us look at each, in turn.

Within the Agency: With few exceptions, a resource investment program or project begins within a particular federal agency (bureau, corps, authority, etc.), often at the field level of that agency. The early planning usually determines the alternatives available for study and decision at later stages.

Resource investment programs typically grow out of past programs and traditional agency activities. Such programs tend to be narrow and specialized—the Bureau of Reclamation emphasizes irrigation, the Corps of Engineers flood control and navigation, the Forest Service timber production. No agency (except perhaps TVA) has a clear legislative directive to consider all possible ways of dealing with a general problem. Instead, each agency tries to see how its accepted traditional programs will fit into a particular situation. Although much emphasis has been placed upon multiple purpose planning in which all purposes receive equal treatment, it cannot be denied that because of agency tradition and legislative mandates some purposes are "more equal" than others. As a consequence, recreation, fish and wildlife, and municipal and industrial water supply are generally considered "incidental" aspects of federal water projects.

Comprehensive Planning Nil

Field personnel lack a comprehensive economic framework for their planning. Resources development is designed to increase future output, yet projections of national requirements for resources products and regional targets are generally lacking. Forestry is the exception. The cost-benefit approach has been widely applied to federal water development. Studies indicate that because of the enthusiasm generated for a project, benefits are often estimated too high and costs too low. More recently, people have begun to realize that a "favorable" benefit-cost ratio for an individual project is not enough to insure economic efficiency. There are many variables, and the sequence in which different projects are undertaken may be critical for total river-basin efficiency. No provision is made for analysing regional benefits and costs and comparing these with national benefits and costs. In short, existing procedures for cost-benefit analysis are inadequate for such problems. Yet techniques of analysis are available to remedy this situation.

The cost-benefit analysis may be severely compromised, and later freedom of decision sharply curtailed, by the political support generated at this stage. Local leaders learn of the proposed development, and local political support becomes solidified before the program leaves the agency —often before it leaves the field office.

Water development projects typically start in field offices of federal agencies, flow upward through the central bureau offices, outward to other federal and state agencies for review, and finally upward again for approval by the President and the Congress. Only rarely is more than one alternative presented for consideration; thus, no real choice is possible at any stage. Various projects, particularly if not in the same river basin, typically move forward separately, without reference to similar projects elsewhere. Projects often acquire active local political support during their developmental stage, thus making impartial decisions on their merits more difficult at later stages.

Federal land investment programs have generally not been examined in light of comparative financial returns. This is especially true for alternative size of investment—for the economists' "marginal unit." Most foresters will agree timber access roads are necessary. But at what point does further investment in roads just barely repay its costs? How does possible further investment in roads compare with equal investment in reforestation? Or in recreation facilities? Such problems have had almost no study.

Admittedly, money costs and income are not the only important considerations in making a decision on resource investment. Sometimes the decision turns on intangibles such as aesthetics, health, or safety. But even then there is need for the best possible economic analysis, so that the costs of not following the most economic course can be known.

Too Much "Take It or Leave It"

Nearly always the resource investment proposals that emerge from an agency offer just one specific program. Often that program is put up on a "take-it-or-leave-it" basis. Other agencies, other levels of government, and citizens generally do not know what the realistic alternatives are. They must vote for or against the proposal, or else make their own studies—which few of them can do.

Review: Water resource investment proposals are usually reviewed by the states concerned and by other affected federal agencies. They, and land investment programs, are reviewed to some degree by departmental officials (as contrasted to the bureau level from which the program originated) and by the Bureau of the Budget. However, almost every student or group which has studied this process feels that review is seriously deficient. States and many federal groups, including the Bureau of the Budget, lack the staff to make a penetrating analysis of agency proposals. Many plans are complicated; a competent review is not easy. Except for the Bureau of the Budget, there is no central organization or mechanism in the federal government whose major responsibility is co-ordination and review of resource investments.

Why Review is Handicapped

Review at every level is greatly handicapped by the lack of alternative plans and analyses. When an agency advances only one program, and then defends it, a reviewer can only wonder what would happen were one dam substituted for another, or two dams built instead of one, or if more investment went in one direction and less in another, and so on. Proposals for single projects or even for single river basins do not provide any basis for deciding whether national needs will be met, or whether more investment is proposed than is needed.

Congress: Federal resource investment programs require congressional action on appropriations, and most water development projects require congressional authorization in advance of the appropriation of funds. One might expect that at this point, real critical review of the proposals

would occur. Students of the process are unanimous in pointing out that this is not the case. Congressmen themselves are too busy with the many other aspects of public business to devote long hours to analysis of complex resource investment projects. The same is true of their own staffs. The committees concerned have only modest staffs, which can give no more, and perhaps even less, attention to a proposal than the Bureau of the Budget has done. Again, the lack of alternatives for comparison greatly handicaps proper review.

The difficulties with congressional consideration of proposed resource investment projects go even deeper. In most instances the direct beneficiaries of federal resource investments are not required to assume a major part of the cost. Although practice differs greatly from navigation improvement and flood control, where the local share of costs is much less than 10 per cent, to the cost of timber access roads which are fully recaptured through higher prices paid for stumpage, a substantial part of investments in both land and water are not repaid by direct beneficiaries. An individual member of Congress finds it hard—sometimes politically impossible—to oppose a project which has strong support in his district. The fact that it will bring investment money and probably continuing advantage to his district is not lost sight of; neither is the fact that the cost comes out of the federal treasury, not directly out of his district. When federal resource investment programs are presented on a national scale, as rivers and harbors and flood control projects, almost every Congressman has a direct stake in the whole bill. He cannot oppose any part without jeopardizing his own. The result is almost uniformly approval of the whole proposal. Projects recommended by the Bureau of Reclamation are individually authorized. They have generally had far tougher going.

It is of particular interest that the federal grant-in-aids program for pollution abatement was authorized as a single nationwide program. Funds under this program, and under various others, are apportioned among states in accordance with a definite formula. But choices among specific projects are still possible within states.

Issues Often Obscured

To a large extent congressional action is confined to the proposals the federal agencies bring it. These, in turn, are more often governed by Administration fiscal policy than by economic analysis of expected costs and returns. The fact that investment expenditures are lumped in the same budget with annual operating costs futher obscures the issues. For many programs, the previous year's level of appropriations for management and for investment is the most important single determinant for the appropriation for next year. Only rarely has the Congress rejected or materially modified investment proposals, or sent them back for further study, or with a request for alternatives.

Clearly the present decision-making methods and procedures cannot be expected to perform the larger and more complex tasks that the future will bring.

Short of discarding the whole system and building a new one—a sweeping proposal that well might be as unwise as it is politically unthinkable—what are the chances for improving the present machinery? We believe that several useful changes could be made within the

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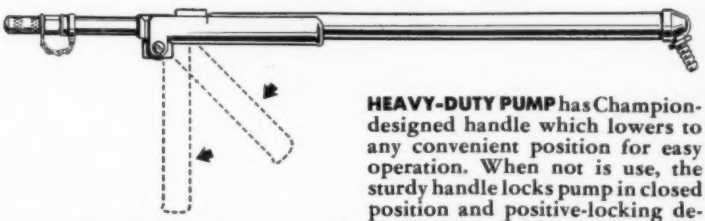

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present general framework, and that most of them could be accomplished promptly.

Actions of this kind could be taken toward three main ends:

1) To broaden the decision-making structure, 2) to improve analysis of investment possibilities, and 3) to make greater use of market-type forces as investment guides.

In an article next month we shall offer some specific suggestions along these lines, not with the aim of presenting and advocating a complete or even partial program, but to expose the ideas to public discussion and criticism. Perhaps they will constitute some of the raw materials out of which a better instrument for making resources investment decisions can be forged in the traditional democratic process.

(To be continued)

Don't Sell Free Enterprise In Recreation Short

(From page 23)

of free and low-cost camping facilities provided by the government. This may be due to the very great demand of the vacationists, as well as to the limited supply of the state facilities and the fact that state campsite fees have not been unduly low. An added factor may be the fact that private campgrounds provide more services and better facilities than the government campgrounds. In Maine about 60 private campgrounds comprising over 2,500 campsites have begun operation in the past few years. Private campsites now greatly exceed the number of state park campsites. A campground association has been formed. About 20 private campgrounds have been started in New Hampshire, and several other states have a few.

Circumstances peculiarly fit the small entrepreneur to constructing and operating a campground. First of all, he may own land with suitable recreation resources—he only needs to develop these and make them available to the public. Secondly he is probably a jack-of-all-trades, and with his many skills he is personally able to accomplish much of the work involved in constructing a campground. He has very little or no overhead and he can devote his own labors to the campground project at no cash outlay. When it comes to contracting for additional labor or machinery, our jack of all trades most often will have friends who will assist at fair rates of pay. If he must contract for outside work he will be able to do so at minimal cost.

When it comes to running the campground, the private operator can be well situated to perform good service. First of all he lives at the campground. He will be able to give close attention to and supervision over campground affairs because of his constant presence. In addition to furnishing the actual physical facilities consisting of the campsite and sanitary facilities, the private operator can make available other services and facilities attractive to the camper:

1) He will take advance reservations for a campsite, thus assuring the camper of a place when he arrives. 2) He may provide a recreation hall, which is useful to campers on rainy days and also in the evenings. 3) Group activities and games may be organized. 4) The operator may provide other recreation facilities, such as boat rentals and horses for trail riding. 5) Separate areas in a campground may be made available for group camping. Such facilities are appreciated by the Boy Scouts and other youth or student groups which go on camping trips. 6) A small store may be provided, which could sell food and camping supplies.

The extra services and facilities which the private campground operator can offer may well justify the paying of a profitable campsite fee and may serve to attract the camper to the private campground as opposed to the government campground.

What about the profit possibilities? How much profit may the operator realize? It is not possible to be precise on this point. The costs of creating campground facilities will vary widely. These will depend on a number of factors such as the nature of the terrain, availability of water, character of the soil, and availability of machinery and labor for construction work. The private operator most often can devote his labors to the development of the campground at no cash outlay. Then too, a campground operation may be combined with another operation and capital costs may be

shared. Campgrounds may be run in conjunction with, for example, a farm, a woodlot or lumber operation, tourist or vacation cabins, a motel, a marina, or a ranch. It is not possible to furnish financial figures on campground operations. It should be noted, however, that some successful campgrounds obtain more income from sale of food and supplies and other services than they do from campsite fees. Often the successful operator will plow one year's earnings back into the campground in order to create additional facilities. Possibly the best proof that a private campground operation is profitable lies in the fact that the number of private campsites has been steadily increasing over a recent period of years.

The advantages possessed by the small entrepreneur are in strong contrast to the conditions under which government must operate. In order to construct a campground, the government must first have elaborate plans prepared. Then it must contract with an outside firm to have the job accomplished. Although competitive bids may be obtained, government must inevitably pay standard rates for labor, machinery, and equipment plus overhead. All of the foregoing adds up to the fact that it will cost government considerably more to install a campground than it will a private entrepreneur.

The situation with the large forest industry company is different from that of the small operator. Nevertheless here, too, the possibilities for the establishment of campgrounds on a profitable basis are promising. It should be noted in passing that a few forest industry companies have made campsites available without charge in the belief that this constitutes good public relations. The number of such campsites represents a very small fraction of the total camping facilities of the country. Moreover there is no evidence to indicate that any appreciable part of our camping recreation needs can or will be met in this manner. On the other hand there are strong indications that forest product industries have a very keen interest in the profit possibilities of campgrounds. It would seem that the great majority of forest product industry companies declines to assume the financial burden of providing free campsites, for they do not see the justification for such a step. If the unfair competition of free campgrounds furnished by national parks and forests is removed, and if the similar competition from subsidized state campgrounds is minimized, then there is reason to believe that forest industries will become interested in creating campgrounds for profit.

There are, of course, a number of obstacles to be overcome, for the operation of a campground involves certain problems. In the establishment of the campground the company must first select a site which has suitable recreation resources and which will also attract sufficient campers. Then the type and quantity of facilities must be decided. Next comes construction—can this be accomplished at a reasonable price? After the campground is completed there are operating problems. One or more supervisors or attendants must be provided for each campground. Facilities must be well maintained and garbage and trash disposal must be taken care of. The bringing of many campers to a forest area involves fire hazards. Camper activities must be supervised and controlled.

Since the large forest industries have not set up campgrounds on a

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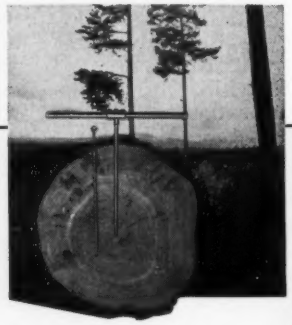

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fee basis to any extent yet, there are a good many questions and problems to be resolved. Over the years, however, forest industry companies have succeeded in developing a host of by-products in addition to the primary product of wood. Recreation is a by-product of the forests. It can be developed profitably.

The company may well find that it can create campgrounds economically. Perhaps it owns machinery and equipment which are useful for those purposes. Perhaps it already has carpenters and other personnel on its payroll who can build the facilities. It may be that a road already exists for a lumber operation and this road may also be used to reach a campsite. While the forest industry company may be able to combine the construction and operation of a campground with its other operations, there are several ways of handling the situation. Some companies have made leases to concessionaires for ski developments. Why could not such an arrangement be made for campgrounds? The company could install the necessary facilities and lease out the campground. Another method would be to have the concessionaire make the capital improvements, in which case he would have to be protected by a long term lease.

From the point of view of what is best for the country and the people, there is no question but that the development of private campgrounds is to be desired over government campgrounds for the following reasons: 1) Private campgrounds remain on the tax rolls and provide tax revenues to government. 2) Public parks and forest lands are removed from the tax rolls and provide no tax revenues. 3) Government campgrounds require large outlays from general tax revenues in order to create the camping facilities as well as to maintain them annually. 4) Government campgrounds are considerably more costly to create than are private campgrounds. It is estimated that the cost of installing some government campgrounds runs as high as $1,500 per campsite. In Maine some private campgrounds have been established at a cost of only a few hundred dollars per campsite.

But what about the camper? How does he feel about paying a campsite fee? In answer we would cite the statement of an eminent leader in family camping. Professor Reynold Carlson, Recreation Department, Indiana University was chairman of a panel discussion devoted to family camping at the 1960 National Recreation Congress at Washington, D. C. In summing up this discussion he stated in part, "I think we can all agree that family campers are ready to pay fair fees in return for good campground facilities."

It is also well to note the surveys of family campers made by the states of Washington and Maine. These show that the average camping family on a vacation spent between $20 and $25 per day for all wants. If campsite fees of $1.50 or $2.00 per campsite per night are charged, it is difficult to imagine that this will invoke a hardship on the camper.

The widespread interest of the small entrepreneur in the profit possibilities of a campground is attested to by the sale of several hundred copies of a booklet entitled "How to Make Money with Family Campgrounds" which was prepared by Camping Council. These copies have gone to persons in 47 states and in four provinces of Canada. The Area Development Department of the Department of Agriculture is interested in the development of private campgrounds for profit. Agricultural colleges have wanted to know about campground possibilities. There are many submarginal farms in depressed areas in different parts of the country. Campgrounds constitute a possible source of additional income. If a farm has the proper recreation resources, a campground could indeed bring in much-needed income. Foresters and forestry schools have asked for copies of the booklet. They want to be informed on the subject so that they can advise timberland owners and include the information in forestry courses.

There is perhaps a need to do some research and study on our camping and recreation needs. We

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must know a great deal more about the preferences and desires of campers if we are to intelligently meet their needs of the future. While we cannot here and now offer definite solutions to our camping problems, we can perhaps make some observations — speculations, perhaps, on what the solutions might be.

1) A great many campers are just like ordinary tourists, and they would prefer campgrounds with developed facilities and playground type activities. Swimming and boating will be popular, plus hot showers and flush toilets.

2) Many campers are gregarious. They like the company of other campers. Within certain limits they like to camp near other campers, but campsites must be properly dispersed.

3) Still other campers like a more rustic type of vacation. They prefer to find a camping spot somewhat removed from civilization.

4) Many of the campers who camp in our national parks probably fail to appreciate the significance of our scenic and natural wonders. They are perhaps seeking more a playground type of vacation. If sufficient campgrounds with attractive recreation facilities were created in areas more readily accessible to the centers of population, it is likely that these would be patronized, thus taking some of the pressure off of our national parks.

5) The trend is toward more facilities in campgrounds. A proper balance must be struck between the number of campgrounds with fully-developed modern facilities and the number with simple and rustic-type facilities. There will still be considerable demand for the latter type of campground for years to come.

Our country is traditionally a free enterprise country. It is heartening to note that the platform of the Democratic Party pledges itself to make a free economy. In connection with small business this platform states in part: "The New Democratic Administration will act to make our free economy really free. . . . We will help create an economy in which small business can take root, grow and flourish." Let us, therefore, take steps to create a favorable climate in which campground business may flourish. The most important first step is the elimination of unfair government competition.

The Delaney's Fight Back

(*From page* 34)

vicinity of his former home, it turned out to be a blessing in disguise. For by this time he had temporarily given up hope of ever retrieving his mother's land. He had nothing on which to base his case. He had often visited the 160-acre tract, which was situated in a square of four blocks of 40 acres each—often enough to see that intensive forest management had not been accomplished on it as yet by the Forest Service.

Then one day a forest fire occurred in the Breezy Hill area of a former artillery range that had been part of Camp Livingston, one of a myriad of Army camps located in Louisiana during the war. Arriving on the scene of the fire, he scouted the area and concluded that it would be too dangerous for his men to fight fires there. As they do everywhere in the South, fire-fighters of the state fight fires by the indirect method; they plow a line around the fire, then set backfires from the line which burn out the main fire. Delaney was afraid that the plows would hit unexploded shells in the area.

"But, Mr. Delaney, these people are paying the two-cent-an-acre protection tax on this property. We've got to fight these fires," argued the ranger.

"What do you mean?" Delaney asked. "This is an old artillery range, isn't it?"

The ranger agreed that this was true but pointed out that "it's private property now." The district forester couldn't wait to get to the courthouse at Colfax, parish seat of the parish. There he learned that residents of Breezy Hill had "raised such a fuss" over the possibility of not getting their lands back in 1947 that something was done about it. More than 100 landowners held a meeting and prevailed upon their Congressman to take action. He in turn "prevailed" upon the U.S. Forest Service not to exercise its option on those particular lands. The agency yielded, and so did the other priority groups. The land was sold back to the original owners at the same price as was paid them and, in some cases, the price was decreased by the amount of damage

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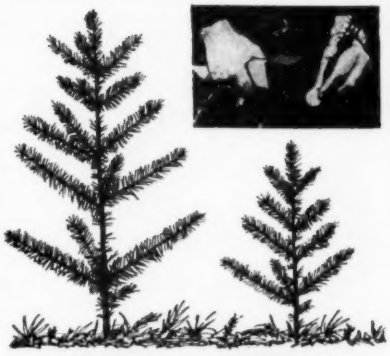

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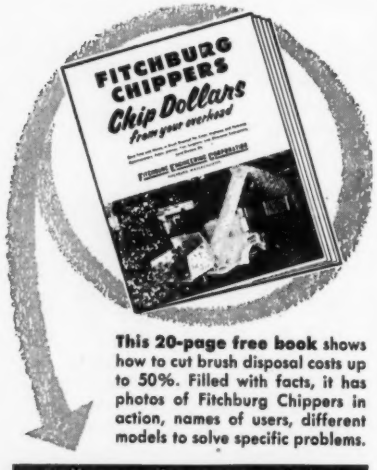

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done to the land while serving as an artillery range. Now Delaney had a precedent. From here on it was "Give back my four forties or fight!"

With this new surge of encouragement, he began to pile up what was to become a stack of evidence three feet high: letters of testimony, newspaper clippings, photostated deeds, and the usual documentary evidence needed to support a case. Within the next five years he was ready to take his case to Washington, despite the fact that two key witnesses in the case died suddenly of heart attacks before the end of his investigation. In 1957, Congressman George Long introduced a bill "to convey certain real property of the United States to Sophronia Smiley Delaney," but he, too, died of a heart attack and the bill was dropped.

Two years later, companion bills were introduced in the Senate and House by Sen. Allen Ellender and Rep. Harold McSween. Delaney appeared (at his own expense) before the House Sub-Committee on Departmental Oversight and Consumer Relations of the House Agriculture Committee on May 20, 1959. He then appeared before the Senate Subcommittee on Agriculture Research and General Legislation of the Committee on Agriculture and Forestry the next day.

He gave a good account of himself. Impressed with his integrity and determination, both committees decided that wrong had been done despite the fact that no mention was made on the deed of Mrs. Delaney's right to retrieve her land. The only strong objection at either hearing was voiced by Sen. Wayne Morse of Oregon, who stood by the "Morse formula," which protects the government from self-seeking individuals with a profit motive. But the committee's thinking was more in line with that of Sen. Everett Jordan of North Carolina. When told by the Forest Service that Delaney's land was now part of a contiguous game management preserve, Jordan ventured that, "A man's homeplace is more important than rabbits."

Recently, the family was allowed to repurchase their land for twice the original sale price of $2500. Delaney had won his fight.

"But the people of this country haven't won yet," Delaney said, "and they won't—not until it becomes law that land bought in times of national emergencies or through expropriation proceedings must revert back to the former owner (if he wants it) when it ceases to be used for *exactly* the purpose for which it was procured. No more automatic transfers of once-private lands from one governmental agency to another. Only then will the people have won their case."

He may have a point. At the present time the federal government owns 768.7 million acres of land in the continental United States—a third of the entire land total. By no stretch of the imagination will it end there, either. New needs arise every day for further acquisition of lands on the part of the federal government. Giant dam projects are being placed on the drawing boards right now that will equal, if not dwarf, those now under construction and in use. Because of the constantly changing tactics of air and ground power, new types of bases will be needed each year all over America. And after all, the federal super-highways program, necessitating the slicing of broad swaths through our hills and forests, has just begun to expand.

So bigger and bigger bases will be needed for defense, larger holes in the ground will be needed to impound water, wider paths will be needed to hold our automobiles, and —this is relatively new—the "wilderness boys" are fighting for longer, unbroken government-owned stretches of wild areas to walk into and out of. How much land is going to remain in a few years to provide taxes? With the government owning one-third of the total land area already, some people have arrived at the conclusion that the situation is growing acute.

But how can the tide be stemmed? One way is the simple expedient of guaranteeing an individual the right by law to buy his land back from the government when the government no longer needs it for its original purpose. There could be exceptions to this procedure, of course, but such exceptions should take an Act of Congress to evoke. Let's look at it this way: whichever agency bought the land had to be empowered by Congress to buy it; the purchase had to be approved as being for the public good and with this approval came expropriation rights. But the agency to whom the land is later transferred has received no such mandate from Congress. All it has had to do, under the Surplus Property Disposal Act, is to show it deserves the land more than does some other agency of the government. Seemingly, no one cares

about the original owner!

Some say that many of those original owners want their lands back only so they can resell their property on the courthouse steps for substantial gain. Some at Breezy Hill did. Unless our civics books are woeful anachronisms, however, the land by right belonged to them in the first place and by right belonged to them over anyone else after the war. They didn't go to Washington and ask the government to buy their land. The government came to them as it did to all such land-owners during the emergency and assured them that their land would be taken through court action if it weren't sold voluntarily. If they sold the land on the courthouse steps for more than they paid for it, then they made a profit and this profit was taxed and there fulfilleth the American system.

And this brings up a point. During the Senate hearings on the Delaney bill, Senator Hubert Humphrey of Minnesota was most helpful to the young forester appearing before those august bodies. He was in favor of passing the Delaney bill, but he asked a question which might be said to sum up the present trend in this country: "Why do you want your land back?" he asked. Delaney answered it was a family homeplace, that the family cemetery was located on the tract.

"Why do you want your land back?"

We have come to the point where the individual must justify his ownership of land, in other words. The only good-old-American answer to this question is, "Because it's my land and I doggone well want it!"

Another method advanced for stemming the tide of government ownership concerns the trading of land when more land is needed. Say the government needs 100,000 acres for a flood project or a tremendous Army base. Instead of buying the necessary acreage, it would trade landowners in the area an equally large government acreage of like value located elsewhere. Of course, this wouldn't be a simple matter and by no means could the government allow the landowner to take his choice. Negotiations will be necessary, much as was done with the Navajo Indians when Glen Canyon Dam was constructed in Utah.

It's unfortunate that the case in point involved the U.S. Forest Service, it might be added, because in no way should it be construed that this agency is a land-grabbing, mercenary agency of the federal

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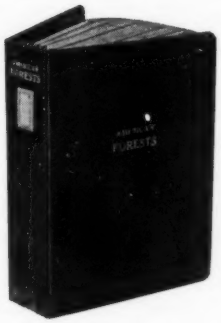

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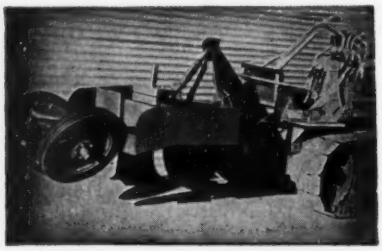

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government. Of the nearly nine and a half million acres of land disposed of by the Defense Department since World War II, the U.S. Forest Service has acquired a mere 14,353 acres—and this for the purpose of blocking in existing national forests for ease of management and administration. In fact, it is one of the few agencies whose record is entirely unblemished in its years of service to the people. Its national forests were purchased for the most part at a time when landowners were glad to sell and no landowner was forced to sell in any sense of the word. Naturally, this article doesn't concern any such purchases.

In other words, the premise is that one-third of the total land area is quite enough for a democratic nation's government to own. The brakes need applying immediately. This doesn't mean to say that the government mustn't acquire any more land. This would be folly, what with changing needs of the security set-up; but it does say that when it acquires more it should release as many acres somewhere down the line. If it doesn't, where is it to stop?

There is still plenty of need for a Morse Formula in government operations. Protection always will be needed by the government from self-seekers; but we also need a People Formula.

Udall Selected For Interior

(*From page* 12)

position of 100,000 acres of forestland in his state known as the "Aztec Lands" that were stripped from the Coconino and Sitgreaves National Forests by court decision as the result of a suit.

When the owners of the property indicated their desire to sell the land, Representative Udall and others did their utmost to have the lands returned to the national forests, where, in the opinion of many including The American Forestry Association, they would best serve the public interest.

Despite support from the AFA and other conservation groups, Congress failed to provide funds for the purchase. Failing in his persuasive effort to return the lands to the national forests pattern, Representative Udall showed that he was not without resources in working for a final solution of the problem that was considerably better than many had feared. Members of the association remarked at that time that the Arizonian displayed qualities that now may stand him in good stead in his new post, namely, the ability to fight hard and, if necessary, to turn defeat into at least partial victory.

Well regarded by his colleagues in both parties on the Hill, Mr. Udall appears to be slated for even bigger things in the opinion of many. It is considered likely that his work in his new post may pave the way for his election as U.S. Senator from Arizona when the veteran Senator Hayden retires.

Mr. Udall was born Jan. 31, 1920, in St. Johns, Arizona, a town founded in 1880 by his grandfather, David King Udall, a pioneer missionary for the Mormon Church. He had migrated from Utah by covered wagon.

A product of Arizona schools, Representative Udall attended St. Johns High School, Eastern Arizona Junior College, and obtained a law degree from the University of Arizona. In World War II he served as an enlisted gunner on a B-24 with the Fifteenth Air Force in Italy.

In Congress, he supported President Eisenhower's foreign policy but at times was critical of the Administration's domestic policies. School aid, the federal highway bill, and the upper Colorado River project are all items of business that should have received more support, he believes. As an Arizonian, he is keenly interested in Indian problems and has indicated he will try to do more for them than has been the case in the past.

A voracious reader, he reportedly obtained a copy of Harold Ickes book upon being appointed to the Interior post. Mr. Ickes, a colorful and controversial Secretary of the Interior, is remembered by many foresters with mixed emotions. Mr. Udall also is fond of hunting and fishing and was a basketball star in college.

His appointment to the Interior position has had a good press. At the same time the press has generally had an accolade for Mr. Udall's predecessor, Fred A. Seaton, referred to by the New York *Times* as "one of the best Secretaries in recent years."

Pollution Is a People Problem

(*From page* 19)

any greater participation appears to be the principal reason for the vigorous support of the federal program by state water pollution control administrators and sanitary engineers.

Several points appear worthy of comment while reviewing past developments and anticipating what is ahead. Foremost among these is the conviction that water pollution control has outgrown its classification as primarily a public health problem. This is due in part to the efficiency of medical science in freeing Americans from the threat of infection from water-borne vectors. This conviction has emerged as a result of the tremendous population expansion and the parallel increase in the demands for water. Complex social and economic conflicts have arisen. The threat to health remains, of course, and may increase unpredictably in magnitude at some future time.

Pollution now rates full membership in the vexing relationships that dominate the entire water resources field. Freeing water of contaminants and preventing the introduction of additional pollutants is an overriding water resources challenge of this century. This technological and construction gap cannot be denied parity with flood control, storage, navigation, and irrigation.

Considerable attention has been and is being given to the advisability of strengthening the federal water pollution control program. This is viewed both as a means of establishing logical federal responsibility in this field and as a stimulus for obtaining more state participation. The suggestions that are being advanced range from a relatively mild realignment of the present program within the framework of the Department of Health, Education, and Welfare to taking the program out of that agency completely.

Some believe that the program should stay in the HEW Department, but that it should be elevated from its sub-basement status and staffed so that its perspective can respond to and reflect the national interest in water resources. There also is a widely-held belief that the program presently is guided predominantly by public health considerations. Advocates of the elevation-and-strengthening theory point out that the activity's communication with other agencies in the water resources field needs improvement.

There is concern about the "Final Report of the Study Group on Mission and Organization of the Public Health Service," dated June 7, 1960, which recommends inclusion of the water pollution control functions in a Division of Water Supply and Pollution in a new Bureau of Environmental Health. Five of the six divisions of this bureau would incorporate functions and responsibilities of existing organizational units. This plan offers no boost for water pollution control. That activity already has divisional status. Other activities, such as air pollution and occupational health, which presently have only branch and program status, would be elevated to divisions. This recommendation clearly falls short of public expectations. Pollution control would remain a sub-basement activity with a mission that is primarily directed toward public health. The published public record makes congressional acceptance of this report doubtful.

This subject certainly will receive attention during the 87th Congress. Water pollution control has been one of the most vigorously debated natural resources subjects to come before the Congress in years. The hearings, debates, record votes, and number of proposals reflect mounting public awareness and concern about this important subject.

Water pollution was a campaign topic for politicians in many parts of the country. The number of candidates who took positive stands on

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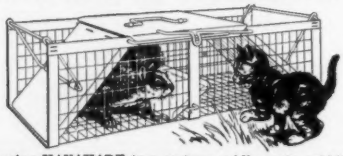

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this serious matter is at an all-time high.

Extensive amendments to the Federal Water Pollution Control Act are being readied for introduction in the 87th Congress. These proposals most likely will include the status of the program within the federal establishment, construction grants to municipalities, program grants to states and interstate agencies, extension and strengthening of federal enforcement, and the control of pollution from federal installations.

In concluding my remarks I want to comment on several points whose acceptance by all water users would do much to assist in achieving pollution control objectives. They are:

1) A national system of water quality standards from a health, recreational, industrial, and aquatic life basis should be developed and accepted by all units of government. These standards should be enforced vigorously and uniformly. Damage and loss should not be required as proof of pollution.
2) All users of water have the responsibility of returning water with all wastes removed from it that can be achieved up to and including ultra-cleansing where required. The national objective should be to keep pollutants out of streams. The design capacity of treatment should be computed for maximum treatment of wastes independent of the estimated capacity of streams to absorb and stabilize wastes.
3) Users of water do not have an inherent right to pollute. A desire for clean water was the foremost viewpoint expressed in communications from national membership organizations.
4) Public awareness programs should be expanded at all levels.
5) The public should insist that all jurisdictions accept and fulfill responsibilities to protect the national well-being by keeping surface and ground waters free of pollutants.
6) Pollution control objectives should be achieved by use of construction grants for waste treatment facilities, tax amortization incentives, watershed erosion control measures, and strengthened law enforcement at local, state, and federal levels.
7) States and municipalities should be encouraged to participate more fully in water pollution control activities. Federal persuasion and leadership should be provided to obtain acceptance of local and state roles where necessary. The federal government does have responsibility for research, enforcement, grants assistance, and other necessary activities.
8) Federal assistance should be conditioned on guarantees of stronger state programs and improved participation in pollution control activities.

Youth Takes Over

(*From page* 12)

The Governor entered politics as a campaign worker for Senator Humphrey, and in 1954 ended 14 years of Republican rule in the state by becoming governor for the first time. As a governor, he has walked in the liberal tradition of Floyd B. Olson, George Norris, and the La Follettes. He has stressed aid to schools, expansion of mental hospital programs, and other welfare measures. Hard working and extremely serious, Freeman should fit comfortably into the Kennedy administration which is already stressing both youth and brains in its appointments to date.

In an article in the Washington *Post and Times Herald,* Reporter Julius Duscha on December 16 characterized Freeman as the "reluctant dragon" of the Kennedy Cabinet, meaning Freeman preferred almost any post in the administration to that of Secretary of Agriculture.

From the standpoint of incumbent Secretary Benson there may be a touch of "divine retribution" in the appointment for in accepting this "hot seat" Mr. Freeman may be on the receiving instead of the dishing-it-out end of farm criticism for a change. Benson blames the Democrat-Farmer-Labor Party, of which Mr. Freeman is a leader, and the National Farmers Union, which is strong in Minnesota, for attacks that made the present Secretary something of a liability politically.

Now, Mr. Freeman is in on a platform involving some of the tightest farm controls yet proposed, and if they are vigorously pressed will almost of a certainty result in criticism from such influential organizations as the American Farm Bureau and others.

In view of the difficulties any new Secretary of Agriculture is almost certain to encounter in the farm field, there is already considerable speculation that the aggressive and dynamic Mr. Freeman may turn some of his energies to what may prove to be more rewarding fields including the programs of the popular and widely-respected Forest Service, the equally popular Soil Conservation Service and other groups under the Agriculture banner whose programs have wide popular support.

By way of summary, and regardless of the admitted obstacles, it can be reported that in Secretary Benson the department had a strong and courageous Secretary, and there is no reason to believe that Gov. Freeman doesn't have these qualities in abundance also.

Can We Outlaw Pollution?

(*From page* 17)

He said it has assisted 2403 sewage treatment projects. For aid so far totaling $205 million, Burney said the nation is receiving improvements costing $1.2 billion. At present, federal aid pays up to 30 per cent of the cost of projects designed to control pollution of interstate water courses.

A. J. Biemiller, director of the legislative department of the AFL-CIO, objected strongly to the President's veto message of last year and said that "far from being a 'uniquely local blight,' waste impregnated rivers and streams in the United States constitute an increasingly serious problem which in the aggregate is truly national."

Mr. Biemiller also revealed that "labor continues to feel strongly that the regional river basin approach is the best yet discovered for dealing with land and water development and conservation. Water uses and pollution problems may vary considerably from one river system to the next for many reasons."

Scientists and pollution experts at the conference enumerated a frightening array of facts, many of them of a general nature, on polluted water. Sources of contamination include detergents, insecticides, human waste, and even atomic particles. Some thought, however, that many of these papers were not too specific in nailing down where these conditions actually exist and just how serious they really are.

Several said the conditions that exist in our waters today probably are not injurious to people "now." But what the cumulative effect will be on the population over a period of years is something to think about —and that goes for fishes in the sea, animals on land and birds in the air. Quite understandably, many speakers stressed the importance of more and more research and most delegates appeared to concur with this objective.

In a news release of the Health, Education and Welfare Department on December 13, it was stated that a bi-partisan attack on the nation's water pollution problem was forecast by two Republican and two Democratic members of Congress. The two Democrats were Senator Kerr and Representative Blatnik. The two Republicans were Senator Francis Case, of South Dakota, and Representative William C. Cramer, of Florida. All four men spoke out for greater pollution control and Senator Kerr suggested that some symbol be devised that would do the same thing for pollution control that Smokey Bear has done in combatting forest fires. At the same time, some skepticism was expressed here as to just how bi-partisan the proposed pollution effort may prove to be in view of what appears to be a determined "anti-spending" effort on the part of some congressmen and senators.

In summary, the pollution conference fully agreed that a pollution problem exists and that it is becoming more serious each year. It agreed that more research is indicated. It did not agree on how the problem can be met most efficiently and economically and a majority of the delegates served notice they are not in favor of any major effort by the federal government to take over the effort.

A reporter from the Milwaukee *Journal*, Russell G. Lynch, perhaps placed his finger on the real seat of the problem when he told the con-

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Notes on the Cuff

NEW AND INTERESTING—**Ernest Swift's** current series on the Public Domain in *Conservation News,* published by the National Wildlife Federation, 1412 Sixteenth St. N.W., Washington 8, D.C. . . . **Bill Carr's** colorful brochure "The Museum at Ghost Ranch," on the new Pack Foundation outdoor museum on U.S. Highway 84, near Abiquiu, New Mexico, which AFA will visit next fall . . . the recent lively issue of the *Missouri Conservationist* that was all-produced by the ladies . . . for the small woodland owner, the October issue of the *Forest Farmer* on the theme "Forest Farming As An Investment" produced by the Forest Farmers Association, P.O. Box 7284, Station C, Atlanta, Georgia. . . . **Bill Dowdell's** dust jacket design for *Minnesota Lands,* (Ownership, Use and Management of Forests and Related Lands) as published by the Livingston Publishing Company for The American Forestry Association.

REPRINT BOOM—Any magazine that reaches *Reader's Digest* via the reprint route should clear the decks and prepare for a deluge of letters. That's what's happened with **Pete Farb's** article "Money *Does* Grow on Trees" published in AMERICAN FORESTS last March and reprinted by the *Digest* this month. We particularly liked the comment by **Lawrence H. Chapman,** of Lynn, Mass.: "This was a *real good* conservation article!" . . . *Pulp and Paper Worker,* published by the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, picked up **Creighton Peet's** article in the October AMERICAN FORESTS, "12 Billion Dollar Jackpot?"—all about the potential of lignin.

SUBSIDIES, RECREATION GRABS RAPPED—**Hardin R. Glascock, Jr.,** forest counsel of the Western Forestry and Conservation Association, Portland, Oregon, warned his members against costly subsidies for small woodlands "already blueprinted" in Washington, and a "gigantic, 10-year crash program."

ference that while most people are cognizant that there is a pollution problem, they just don't pay attention to it "unless if affects them directly." What is needed, he said, "is a public sense of urgency" that will create a public demand for remedial measures on a broad front.

Others predicted no major breakthrough would be achieved until polluted rivers spawn some frightening new disease the human race has never encountered before. Perhaps one of the ironies of a conference that was organized and developed by the Health, Education and Welfare Department is that most people today have implicit confidence in physicians to take care of them come what may.

In conclusion, it must be reported that if the temper of the pollution conference is a fair indication, no really burning sentiment exists in the country as of today for any crash program that would start getting on top of the pollution problem now. For the most part, most of the participants indicated they will meet their problems as they arise at the local level with some federal help but with no directives from Washington. As far as they are concerned, Washington has not been elected captain of the pollution team.

Editorial—How Serious Is The Pollution Problem?

(*From page* 15)

Many of these chemicals—salt just to mention one—can kill a man if ingested in sufficient proportions. Today, thanks to a small army of technicians who look after the 240.5 billion gallons of water we use every day, we are ingesting these foreign bodies only in minute proportions. But the epocal question here is just when does the dam burst? The people and the compounds keep coming. Our garbage disposal problem becomes increasingly acute. What will the cumulative effect be 10, 20, and 30 years from now? When do we reach the point when the water cocktail starts winnowing out the fishes in the sea, the animals on the land, the birds in the air, and YOU?

Science wants to know these answers. And being human themselves despite all, they would prefer to have those answers BEFORE rather than AFTER some frightful new scourge strikes mankind as the result of fouled-up streams, even as did the plagues of old. Despite our tardiness, apparently scientists believe we have time to take the necessary steps providing we will emphasize first things first—research—and avoid costly programs not supported by facts simply to keep us on good terms with our joiner complexes. What worries many thoughtful people is that unless we DO find these answers, Mother Nature herself will find ways and means to purge herself of her own worst enemies. Who can doubt at this juncture that mankind itself is her biggest scourge?

On tht basis of the facts disclosed we conclude that we do indeed have a pollution problem, and it is a very serious one. In effect, we are living with a time bomb and when it will explode no one can say. We certainly do not intend to resort to alarmist measures, but what these scientists are saying—and in our judgment it offers scant comfort—is that while pollution probably won't kill us today it will very likely get us tomorrow. By all means, let us accent research. At the same time there seems to be no good reason why we should not step up the cleanup of municipal pollution via the federal-state partnership route. While there may be a few jurisdictional disputes, no one has yet successfully refuted the fact that this program has worked well, albeit modestly, and that the federal participation has actually spurred the communities to greater action. In conclusion, we cannot speak for the association, but one gets increasingly sick, tired, and disgusted with having to put up with shoddy, second-rate measures as they apply to a bulwark on which the very security of this country largely rests—namely our resource wealth. The atrocious condition of our streams and rivers offers a prime example. Why should the world's wealthiest, most affluent nation have to put up with such conditions? How can we *afford* to do so? If we are not sufficiently concerned about other living creatures, why are we not sufficiently concerned about what we may be doing to those temples with their spark of divinity—our own bodies? Allowing these conditions to persist is not only an affront to ourselves, it is an affront to Nature and to the Creator himself. Just how tolerant these great Forces will continue to be with mavericks who insist on fouling their own nests is a question that gives any thoughtful man pangs of acute anxiety. (JBC)

Reading About Resources

(*From page 35*)

that grip the future with rough, impolite and determined hands.

We are implicitly assured that such is possible by co-editor Meyer's own chapter, "The Literature of American Forestry." Having written "Reading About Resources" for more than three years, I was not only interested in, but greatly impressed by, Meyer's tight summation of the writing that foresters (and others knowledgeable in forestry) have done—which never fails to underscore for me the quality of the profession. The record is exceptional; there is every reason to believe that the literature of the coming decade will be as competent, and sometimes brilliant, as that of the past. Upon this prospect alone must rest much of our confidence in the future of forestry.

The Society of American Foresters has grown to maturity with the profession. Both are now prepared, as this book demonstrates, to serve the nation effectively in the resource-critical forty years before we can expect a Centennial publication.

NEW AND TO NOTE

Exploring the River, by John and Jane Greverus Perry. (Whittlesey House, McGraw-Hill Co., Inc., N. Y., 1960. 203 pp. $3.50.) I am convinced that the tree is the basic element in a balanced natural order, particularly in the Temperate Zone; and it follows from this that the river basin is the basic unit. Once men and women understand the variety and significance of the river basin's role in maintaining the health of the entire biota, the proper management of the ecology of our basins will no longer be the critical, and sometimes hopeless, problem that it is today.

John and Jane Greverus Perry, both accomplished students in the resource-conservation field, have done a job in **Exploring the River** that could win tens of thousands of young people to a completely new perception into the importance of the river basin.

If this delightfully entertaining little book could but have the audience it deserves, tomorrow's citizens would grasp the working principles of conservation as there is no evidence the electorate does today. I would recommend **Exploring the River** as *essential* reading for young people—and for any parent lucky enough to get his hands on a copy. Told in terms of a trip down the river—a fictitious river—the life of the basin becomes apparent, and makes sense, through an exciting narrative. This is exploration as real as climbing the Matterhorn, and a whale of a lot more important to us all.

Birth of a National Park, in the Great Smoky Mountains, by Carlos C. Campbell. (University of Tenn. Press, 1960. 150 pp. $5.00.) The tumbling heaps of mountains that center in western North Carolina have inspired generations of men. Never did they inspire to greater effort, however, than in the undertaking to have this last eastern sanctuary designated a national park.

This beautifully illustrated book is a convincing testament to the dedication of those who finally achieved this goal. It was a heart-breaking task. Its accomplishment is a heart-warming tribute to the power of free citizens to attain the public good.

This is a major addition to national park literature. Carlos C. Campbell deserves special thanks.

The Camper's Bible, by Bill Riviere. (Doubleday & Co., N. Y., 1961. 176 pp. $1.95.) As an amateur camper who knows few of the tricks of the trade, I have probably read more books on camping to less practical profit than any of my tenderfoot brothers.

Hence I ask to be forgiven my rhapsodic praise for this handbook, **The Camper's Bible,** which, at long last, gives all the answers that any distressed father needs to cope with a weekend in the open for the family.

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Considering the extent of camping today, in terms of sheer numbers, I would say the book deserves to sell a million copies. It won't, for the reason that we persist in our uncomfortable mistakes when, if we only had the gumption to spend $1.95, we could have all the advantages of a personal guide. There is something in men that likes to learn these things the hard way—and **The Camper's Bible** is for those who have had enough of that!

The River That Gives

(*From page* 30)

the total average annual flow of the river.

In the high mountains the Kings fans into three distinct branches, with the South Fork passing through the famed gorge, Kings Canyon National Park. A portion of the Middle Fork is seen spectacularly from vista points along the road to the canyon and, for the most part, lies in the domain of the park, although it is reached only by trail. All the power development is along the North Fork.

Here P. G. & E. is spending $80,000,000, of which $1.5 million is on roads that open a remote and beautiful region to all the motorists of the land. And the lakes themselves are already popular with campers and sportsman.

The power project itself is both unique and spectacular. By gathering and storing the water in the two lakes and releasing it through a series of tunnels, which total almost 14 miles in length, and sending it hurtling down the nearly perpendicular drops of the great penstocks into the power houses, 296,000 kilowatts of power are generated. In the process the water is used three times at three power houses, each one step beneath the other, and then is released into Pine Flat Reservoir for irrigation purposes—this without the loss of a drop to the legal owners of the water, the land owners of the Central San Joaquin Valley.

One of the interesting features of the development program is the construction of the first large underground power plant in the United States. Carved out of solid granite, the two turbines installed here are 500 feet underground; water rushes to the turbines through a tunnel, 13 feet in diameter and more than six miles in length. From the tunnel the water drops through 4,560 feet of penstock, the pipe being 96 inches in diameter.

This underground plant—Haas Power House—is a chamber 173 feet by 56 feet by 100 feet high; its outlet is a tunnel 2,000 feet in length. An elevator to the surface has one of the longest runs in the West—deep in Sierra granite—and is in a shaft 18 feet in diameter. This shaft also provides ventilation for the great cavity.

Because of the general plan of the whole project, the power company estimates it saved almost a million dollars by building the underground installation.

The building of the dams on the Kings has created a whole new life for the river and, of course, for those that use it. They not only store the water till the time of its need during the long San Joaquin summers, making the dry land a land of green, but they also assure valley residents, as well as visitors, of continuous supply of water for swimming, fishing and boating.

With the swift growing of California cities, recreational facilities have been taxed to their limits by people wanting to "get away from it all." The Kings, historically a feast or famine stream, has finally come into its own. No longer do investors need to fear that the river will wipe out their investments in one swift rush; no longer do they need to fear a waterless summer. Since the water users of the lower Kings, in the Tulare Lake area, have their rights to some of the water, there is always an adequate supply for those who would enjoy this tranquil stream. Tranquil? Yes, for once the Kings leaves the mountains behind its rushing is over—it seems in no hurry to reach its ultimate end; it becomes a river of rest and play, and peace lies along its banks, lies there in the shade of willows and cottonwoods and oaks, lies there and is absorbed by countless thousands.

While ranchers of the bountiful valley till and irrigate and wait to reap the harvest in this diverse land, this land that grows more crops in larger amounts than any other, this land that is blessed by a warm sun and a fertile soil—the Kings plays its part. Without it the land would not be more than a desert, a place of wind-rolled tumbleweeds, of sparse grasses and jack-rabbits.

And while the very life of the valley depends upon the Kings it also provides a fun-land supreme. Even now there are four new lakes to enjoy—counting Avacado Lake which is just below Pine Flat Dam and was created by seepage from the river when the rock and gravel was excavated there for the building of the dam — and miles of stream-banks, both in the mountains and in the valley. New resorts are being built, and campgrounds and lodges.

Yes, the Kings is enjoyed by all peoples of all races, for here in the San Joaquin Valley the whole world seems to congregate. And worldly wealth is not necessary to enjoy the shade or sun or water. While expensive boats rush across its waters, the penniless, the unfortunate wanderer, may find rest in the Kings.

And so, the small, erratic Kings, now tamed to a steady flow, fails in its search for the sea, but it gives and gives again, as few streams do—water for power, for recreation, for irrigation. From trickle to trickle it is a live thing and running; it sings with its running—it sings of living and more living. It ends, yes; but, in another sense, it never ends, for it is always running, always living.

Editor's Swan Song

Carl D. Shoemaker, veteran Washington conservationist for 45 years and in recent years editor of the news service of the Natural Resources Council, laid down his pen last month and announced that the December issue of the news letter was his "swan song."

In all probability, Mr. Shoemaker has probably placed his personal stamp on more wildlife legislation than any other toiler in the conservation field. He has also been a source of counsel and good advice to newcomers in the field, one of his pet admonitions being "never give the bill you want introduced to a howler on the Hill; give it to some quiet, conservative sort of person who really works behind the scenes."

As editor of the legislative news letter of the Natural Resources Council, Mr. Shoemaker has enabled organizations to keep on top of the legislative picture and his reputation for accuracy is such that most people concur that when "Carl Shoemaker says it's so, it's so."

DUCKS UNLIMITED!

THANKS to the continuing efforts of such organizations as the Izaak Walton League and the National Wildlife Federation, most sportsmen, in the opinion of The American Forestry Association, are law-abiding people of good will.

But there is no use denying there is an "anarchist" element among those who proudly proclaim they are "sportsmen," "woodsmen" or whatever term suits them best—and they continue to ruin good hunting and fishing opportunities for thousands of decent people who like outdoor sport.

These are those desperados armed with rifles and shotguns who break not only the game laws but who also willfully destroy property and in some cases even shoot domestic stock all in the sacred name of good clean, sport.

The stories about these outrages are too numerous to be discounted. Every conservation organization receives them regularly from irate land owners who say from now on they are running every so-called sportsman off their property. There is the rancher in Arizona who reported to AFA some time ago that he had "had it" after "sportsmen" deliberately wrecked the tractor he had purposely left at a stream crossing to enable visiting sportsmen to tow their cars across the water. There is the farmer in Delaware who tells how hunters shot three of his domestic turkeys. There is the farmer in Illinois who relates how "sportsmen" tramped unthinkingly over new plantings. And many, many more.

These stories, far too many of them, are bad enough and owners must sometimes be forgiven when they cry that some men, once they have a lethal weapon in their hands, become wanton savages with no respect for property rights or even life itself.

But the blow that really kills Mother is when stories hit the headlines such as the one that came out of Houston, Texas, in November, when it was reported that seven Houston businessmen and "sportsmen" were arrested at Seadrift and fined $959 on charges of killing too many ducks and ducks on which there is a closed season. Three men from other cities were fined $411 on the same charge.

Bad enough, but what's so unusual about some businessman shooting too many ducks, you might say? Just this. Among those charged was John R. Suman, a national trustee of Ducks Unlimited, the well-known organization "dedicated to the conservation of waterfowl."

Suman, contacted at his Houston home, confirmed that he was in this party that was arrested but told newsmen that "they promised me there would be no publicity."

According to Justice of the Peace Albert Pennington, the hunters had a total of 80 ducks, which was twice as many as they are allowed to shoot in a day and among them were 25 redheads on which the season is closed. "Ducks Unlimited" for fair!

As previously stated, reputable wildlife organizations certainly do not condone these practices and do everything in their power to teach farm and woods courtesy to hunters and fishermen. Just the same, many property owners make no secret of the fact they think these organizations are remiss when they fail to seize on these depredations and "exploit them to the skies," as one AFA member phrased it.

As another correspondent wrote, "Some of these groups are not a bit reluctant to air YOUR dirty linen to the public view and everyone knows what a whispering campaign by the local hunting and fishing chowder society can do to the reputation of some law-abiding property owner who has the temerity to run these vandals off his land. But when its one of THEIR crowd that is caught red-handed, it's a different story!"

There is a certain justness about this complaint and based on the comments received by The American Forestry Association it will strike a sympathetic chord in many hearts. The landowner is certainly not always the ogre in the case and AFA, for one, has no sympathy for "anarchists with rifles" or big shots in Ducks Unlimited itself when they fail to show common respect for the laws of the land.

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By JAMES B. CRAIG

WASHINGTON, D.C.—AN INFORMAL POLL OF CONservationists here in the closing days of 1960 reveals that most of them believe the next year or two will see greater conservation gains than has been the case in the immediate past. With the economy moving in a peculiar sidewise motion and unemployment increasing, two predict we may see another New Deal for conservation comparable to that of the early '30's, but most consider that unlikely—even undesirable in several cases. For one thing, most conservationists are optimistic that the present slump, recession or whatever it is will straighten out by mid-year at the latest. For another, such serious problems as gold, the value of the dollar, and the importance of shoring up our economic strength is certain to occupy the full attention of the new administration. While the new administration may go through the motions of activating the most extreme planks in the Democratic Platform, many conservationists doubt that the Cabinet itself will work very hard at some of the items set forth and even more doubtful if Congress will buy the package if they do.

THE TEMPER OF THE CONGRESS IS MORE CONSERVative than liberal, many conservationists believe. While the new administration still remains something of an unknown quantity more and more people here are of the opinion President-Elect Kennedy will travel the middle of the road for the most part and point to his appointments to support that theory. That is why most conservationists will settle for moderate and continuing gains in their chosen fields. Some also expressed the belief that another New Deal with a rash of experimentation might prove a detriment rather than an aid to conservation. More and more, conservationists are becoming sensitive to charges of "waste" or "impracticality." They say their continuing programs ARE practical and the thought of having them "used" to bolster employment, for example, does not appeal greatly to many of them. Then too, many going programs are already outlined and blueprinted—the Program for the National Forests and Mission '66 to to name two—and conservationists say implementing these programs is only a matter of degree, or how fast it can be done with the trained manpower available.

SEVERAL CONSERVATIONISTS BELIEVE THAT THE importance of "Sputnik" has not been sufficiently played up in connection with their programs. Nothing since World War II has exerted quite the same psychological impact on the American people, they believe. They think Mr. Kennedy, in his campaign, correctly gauged the effect of this jolt and that the Republicans did not. Such statements by Kennedy as "We've got to get this country moving" exerted appeal, they point out, a thought that is borne out by the temper of many action groups —P-TA's to name one—members of which found Kennedy's approach attractive. As a result of the Sputnik jolt, Americans today are somewhat more responsive to change and innovation than they were eight years ago, conservationists believe. They look for determined and successful efforts to beef up the education establishment in the nation and they think conservation education programs will be well advised to tie in with this effort and move with it. While our greatest resource admittedly is youth, tomorrow's citizens will also require an abundant supply of natural resources that are on a firm management basis, conservationists say.

IN THE MAIN, CONSERVATIONISTS EXPRESSED satisfaction with the work of the departing policy team at Interior and Agriculture and also with the new appointees. Secretary Seaton in particular was warmly praised by many as was his right hand man, Ross L. Leffler. The appeal exerted by Seaton and Leffler marked one of the most abrupt about faces in conservation history at Interior. Prior to their appointment

the conservation roof had fallen in as conservationists rose in wrath over a whole series of unfortunate events—the Al Sarena case, the Dinosaur Monument fight, and the battle over leasing in the wildlife refuges. Conservationists say the way Seaton and Leffler soothed the troubled waters was conservation statesmanship of the highest order. Secretary Benson, while admired, has not identified himself so closely with the conservationist element as has Seaton and Leffler. This is possibly because he delegated many responsibilities of concern to conservationists—forest programs, to name one—while he battled with Congress. At the same time, they agree the Benson administration has been sound in the main and that many wise decisions of lasting worth were made in an eight-year period. All of the conservationists contacted said both men could have accomplished more if their own party had been in charge in Congress.

THIS IS A SITUATION SECRETARY FREEMAN, IN Agriculture, and Secretary Udall, in Interior, will not have to face, conservationists say so far as party is concerned. Most of them think Secretary Freeman will be kept fully occupied the next few months on how to reduce farm subsidies and hold consumer food prices in line at the same time. Later, he will get around to forestry, and they predict the new administration will press for a stepped-up program to bring farm woodlots into the forestry orbit and that it will be done within the framework of the Clarke-McNary Law. Conservationists are confident that Udall will prove to be a good "public lands" Secretary and that special interests are in for some jolts. Greater Interior emphasis on public power, water pollution, and water development is predicted. Three said they hoped Udall's administration would be of such extremely high caliber that the first steps would be taken toward the creation of a Department of Natural Resources that would bring forestry into the "Interior" orbit. Three others disagreed with this and said forestry was already in the right slot since timber is a crop. With the exception of one contact, conservationists were all confident that the youth and vigor of both Mr. Udall and Mr. Freeman would prove beneficial and will likely give conservation a needed "shot in the arm." The lone exception said he preferred to withhold judgment in view of the "extremely liberal" background of both men.

BASED ON THE CONSERVATIONIST POINT OF VIEW, the temper of the Congress might be said to be slightly more conservative than that of the public itself. The new administration is being pushed into a somewhat more "middle of the road" position than it might have preferred. At the same time, conservationists feel there will be fewer studies, more action; less concern about "rocking the boat" as bigger effort is made to come to grips with many deep-seated concerns that are troubling the thinking public.

ONE DARK CLOUD ON THE CONSERVATION HORIZON that will require extremely good judgment on the part of both Secretaries and even the President himself is the prospect of a bitter fight between the Forest and Parks Services over the control of land allocated for recreation purposes, conservationists agree. The open clash, if it develops, will probably be precipitated immediately after the report by the Outdoor Recreation Resource Review Commission, they think. Foresters and their supporters are not taking kindly to proposals on the Hill and elsewhere that choice national forest areas be handed over to the parks and are digging in for a fight to the finish, if necessary. Proposals in a recent issue of the New York Times that there can only be one solution, and that in favor of the parks, have fanned the flames with the result that an organized opposition is forming from the grass roots up. To avert an open rift that would do the entire conservation movement a disservice is going to pose an extremely delicate task and one that may call for conservation statesmanship of a high order, most working conservationists agree. And it looks like Mr. Freeman and Mr. Udall are elected, they add. Aside from the fact that these clashes within the conservation family do the movement great harm, most conservation groups including The American Forestry Association have members who are on both sides of the fence who are fully capable of "taking a walk" if they think their views are getting the short end of the stick. And for cold fury nothing surpasses a donnybrook between devotees of the so-called "wise use" and "preservationist" faiths. That is why The American Forestry Association, which has already explored the situation rather fully, plans to offer both Freeman and Udall its facilities and resources in helping to work on any valid plan that will avert an internal warfare. Failing in that, it will have to take a stand as will most other conservation groups and few of them, frankly, relish the prospect. There ought to be some intelligent solutions to this problem that would avert the necessity of seeing conservation cut its own throat.

The Chief's Report

Forest Service Chief Richard E. McArdle

THE Program for National Forests, submitted to Congress last year, I believe will be looked upon in the years ahead as a turning point in the management of these public lands," Forest Service Chief Richard E. McArdle wrote Secretary of Agriculture Benson in his 1959 annual report. This long-range program, popularly known as Operation Multiple Use, provides for more intense and skillful application of multiple use practices on the national forests. The Forest Service considers the program the best answer to meeting the growing pressures on natural resources from a larger population.

Highlights of the 1959 report are:

Research — Serious disease problems in seed and transplant beds can now be overcome by using new chemical treatments. The reduction in seedling losses which had occurred in the past has assured adequate trees for the large planting programs nationwide. Work at the Forest Genetics Institute has proved that trees with superior growth, form, wood quality, and pest resistance can be scientifically bred.

Scientific management of watershed and forest rangelands moved ahead. A number of studies in the West have proved that manipulation of forest vegetation in snow country can increase the yield of water 10 to 20 per cent.

Antibiotics control blister rust —Antibiotic drugs have for the first time been successfully adapted to the control of a tree disease. Two in particular—acti-dione and phytoactin—have shown most promise. Acti-dione, so far applied only by manual spray to the trunks, has shown that it kills blister rust on white pine. Now there is good promise that antibiotics will also be effective as an aerial spray.

Operation multiple use—Briefly, Operation Multiple Use is a blueprint to assure that vital national-forest resources would contribute their full potential to the people in pace with the nation's expanding population and economy. The program will enable these public forests to meet the rising demands that a larger population is making on them. It encompasses a 10-15 year expanded management and development operation, which would meet present needs as well as prepare to meet still greater needs of a larger population in the future.

Recreation use up 19 per cent —Still more people sought out national forests for rest and play —to the tune of 13 million more visits than last year. Recreation use of these public lands, a good barometer of the national trend to more leisure and outdoor play, moved upward again in the biggest annual increase in 13 years. It was a 19 per cent jump over the previous year. Visits totaled 81.5 million, as against 68.4 million in 1958.

Record timber harvest—Under multiple use and sustained yield principles, more timber was harvested from national forests in fiscal 1959 than ever before. The record cut of 8.3 billion board feet brought $115,808,000 in cash receipts. This was a 30 per cent increase over the previous year in board feet harvested, and a $29.5 million rise in receipts. It was also the greatest 12-month increase ever reported. Timber receipts for 1950, only 9 years ago, amounted to $29,379,000.

Cash receipts top $124 million —Besides other valuable benefits these public lands afford, cash returns in 1959 came to $124,067,000—about $30 million more than receipts for the previous fiscal year. Total Forest Service receipts 9 years ago (1950) were $34,485,00.

Millionth acre of range improved—A significant mark was passed during the year in improving the grazing resource: the millionth acre of national-forest rangeland was rehabilitated either by seeding or through control of undesirable plants. By June 30, 1959, a total of 1,122,842 acres had been treated. Of this amount 750,000 were treated in the period 1950-1959. As encouraging as this progress is, there remain 4,400,000 acres on which similar revegetation measures need to be applied.

Two billion trees planted—Planting in fiscal 1959 on all lands reached the remarkable record of more than 2 billion trees on 2,151,743 acres. This is an increase of 37 per cent, or substantially in excess of a half million acres more than were planted in 1958. In 1950, fewer than a half million acres was the annual planting.

One-third (about 700,000 acres) of the 1959 planting was cropland placed under Conservation Reserve in 10-year contracts. Of the total 1959 planting, 89 per cent (1,915,718 acres) was on privately owned land, and about one-fourth of this was on larger ownerships held by forest and other industries. Not nearly enough was planted on small ownerships. Planting and seeding on federal lands—including 112,000 acres on national forests—totaled 169,000 acres, a 23 per cent increase over the previous year.

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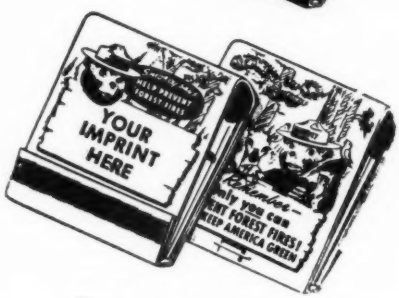

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